RELATIONSHIPS BETWEEN PRESCHOOLERS' ATTITUDES AND PLAY BEHAVIORS TOWARD CLASSMATES WITH DISABILITIES

BY

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DISSERTATION

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Abstract

This study examined the relationships between 32 typically developing preschoolers' attitudes and play behaviors toward their classmates with disabilities or developmental delays. Children's attitudes toward peers with disabilities were assessed using three different methods: child interviews, *Sociometric Peer Ratings*, and a *Social Acceptance Scale*. Children's play behaviors (e.g., solitary, onlooker, parallel play, associative/cooperative play) and teachers' involvement in children's play were also observed during free play over a 10-week period. Results show that children's identification of a classmate with an IEP as having a disability was negatively related to their associaitve/cooperative (AC) play with the classmate. Typically developing children's sociometric ratings of classmates with disabilities were positively related to their AC play with the classmates with disabilities. In addition, children's sociometric peer ratings were a stronger indicator of whether a typically developing child would play with a classmate with a disability than was identification of a classmate as having a disability. Suggestions for future research and implications for practices are discussed.

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Table of Contents

Chapter 1

Introduction

Inclusion of young children with disabilities in regular classrooms with typically developing peers has become a primary service option in early childhood special education (e.g., Odom, 2000; Sandall, Hemmeter, Smith, & McLean, 2007). Recent data reveal that approximately half of all preschool children with disabilities receive special education in programs that include typically developing peers (U. S. Department of Education, 2004). Theoretical, empirical, and ethical rationales in special education fields emphasize that children with disabilities should have the opportunity to interact with their typically developing peers in inclusive school environments (e.g., DEC/NAEYC, 2009; Hestenes & Carroll, 2000).

As children with disabilities have enrolled in inclusive classrooms with their typically developing peers, one of the first challenges teachers face is to create a classroom community whereby typically developing children understand and accept students with disabilities as peers and friends (Greenbaum, Varas, & Markel, 1980). In the early days of inclusion, the expression of positive attitudes toward children with disabilities was considered to be an indicator of success (McHale & Simeonsson, 1980; Siperstein & Chatillon, 1982; Westervelt, Brantley, & Ware, 1983; Westervelt & McKinney, 1980). During that time, much of the research focused on identifying existing negative attitudes of typically developing children toward their peers with disabilities and then intervening in an attempt to modify these attitudes (Salend & Moe, 1983). Developing and implementing such programs has been advocated and various methods have been suggested to improve students' attitudes toward their peers with disabilities (Sipertein & Chatillon; Westervelt et al.).

Researchers also identified positive attitude development as a benefit that typically developing children obtain from participating in inclusive programs (Okagaki, Diamond, Kontos, & Hestenes, 1998; Peck, Carlson, & Helmstetter, 1992). These researchers pointed out that the majority of empirical work in special education focused on the outcomes of children with disabilities as a result of enrollment in inclusive programs with very little research focusing on the benefits that typically developing children achieve as a result of participation in inclusive programs. However, typically developing children may learn about and show greater acceptance of individuals with disabilities through their interactions with peers with disabilities in the inclusive classrooms (Hestenes & Carroll, 2000). Understanding typically developing children's ideas about what it means to have a disability and children's decisions to include or exclude a child with a disability in activities is critical in understanding the social environment within an inclusive classroom (Diamond, Hong, & Tu, 2008).

Moreover, positive attitude development is critical as social relationships develop between children with and without disabilities. Establishing social relationships with peers is a major developmental task in early childhood (Guralnick, 2001), for positive peer relationships are associated with successful school adjustment as well as long-term social adjustment (Bagwell, Schmidt, Newcomb, & Bukowski, 2001; Buhs, Ladd, & Herald, 2006). According to Odom, Zercher, Li, Marquart, Sandall, and Brown (2006), researchers have shown that social engagement and acceptance by peers during the early years appears to be a facilitator of social competence, while early social rejection is a strong predictor of poor outcomes in adulthood. Thus, it is reasonable to expect that children's peer relationships are enhanced when children with disabilities are accepted by, and have multiple opportunities to interact with, their typically developing peers (Diamond et al., 2008).

Relationship between Attitudes and Behaviors toward Peers with Disabilities

Given the importance of attitude development toward peers with disabilities in inclusive classrooms, some researchers have shown that children in inclusive classes who had social contact with classmates with disabilities had more positive attitudes than other children who rarely spent time with their classmates with disabilities. Diamond, Hestenes, Carpenter, and Innes (1997) reported that preschool children in inclusive classrooms gave higher social acceptance ratings for a hypothetical peer with a disability than did children from classes that did not include children with disabilities. Likewise, for children in Grades 2 through 7, Voeltz (1980) showed that inclusive school experiences with peers with severe disabilities were associated with more positive responses on the *Acceptance Scale*.

Diamond and Hestenes (1994) also showed that participation in inclusive preschool classrooms helped preschoolers understand their peer's disability. In this study, preschool children in a class that included a child with severe hearing loss were more likely to report that hearing loss impacted a child's ability to speak than were other children in a class that did not include children with hearing loss. This research finding suggested that interactions and observations during the school day impacted children's understanding of their peer's disability. In other words, the ways in which children think about and respond to peers with disabilities may influence their play with peers with disabilities (Diamond & Tu, 2009).

However, there is limited research investigating the relationship between young children's attitudes and actual behaviors toward peers with disabilities in inclusive classrooms (Diamond 2001; Hestenes & Carroll, 2000; Okagaki et al., 1998). The researchers who have studied this relationship have focused on the following research questions: "Do children who interact frequently with peers with disabilities tend to have more positive attitudes?" and "Are

children who have positive attitudes toward peers with disabilities more likely to interact with peers with disabilities?" For example, Okagaki and her colleagues (1998) measured the social play of 36 preschoolers toward their classmates with and without disabilities using a 2 second look and 15 second record sweep method. Fifty observations were conducted per child in 3 inclusive preschool classrooms. The observations were conducted during free play periods. The observers coded whether the target child was engaged in play behaviors with a peer (including social play and parallel play) and whether the child was playing with a typically developing peer or a peer with a disability. The researchers also interviewed the participating children to assess their social acceptance of hypothetical children with and without disabilities using the *Pictorial Scale of Perceived Competence and Social Acceptance* (Harter & Pike, 1984, adapted by Diamond, 1994). The children's willingness to play with the hypothetical children as a play partner was assessed using the *Social Problem-Solving Test-Revised* (Rubin, 1988). A major finding in this research was that children who were more willing to play with hypothetical children with disabilities were more likely to interact with their peers with disabilities in free play situations in their preschool classrooms.

Diamond (2001) also examined the relationships among young children's ideas, emotional understanding, and social contact with classmates with disabilities. In this study, 45 typically developing preschoolers were observed during free play activities using 10-minute intervals over a 6-week period, for an average of 49 observations for each child. Social contact was defined verbal or physical exchange or sustained visual regard, which indicated that the participants were aware of, and responsive to each other. Children and adults who were engaged in social contact at the time of the observation were recorded on the class map. Children were assessed on the following three measures: (1) social acceptance of hypothetical peers with

disabilities using the *Social Acceptance Scale* adapted from Harter and Pike (1984), (2) using helping strategies in certain classroom situations with 6 short vignettes and questions adapted from Rubin's *Social Problem Solving Task-Revised* (1988), and (3) their emotional sensitivity to certain social situations using interview questions adapted from the work of Hoffner and Badzinski (1989). Results showed that half of the children engaged in social contact with at least one classmate with a disability. Also, children who had social contact with classmates with disabilities were more sensitive to cues associated with different emotions and were more accepting of hypothetical peers with disabilities than were children who were observed interacting only with typically developing peers.

In the third study that focused on the relationships between young children's attitudes and behaviors toward peers with disabilities, Hestenes and Carroll (2000) observed 29 preschoolers using the scan sampling technique. They first selected one area of the classroom or playground to begin each scan and then proceeded in a clockwise direction until the map was completed. During free play periods, observers watched each area containing one or more children for 10 seconds and then recorded children present, each child's level of play (e.g., solitary, cooperative), and whether or not a teacher was present on the map during the interval. At least 43 observations were collected for each child. The researchers also interviewed the participating children to assess their overall understanding of hypothetical children with disabilities using the *Competency Ratings for Disabilities* adapted from the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter & Pike, 1984). The children also rated their preference of playing with each classmate using sociometric ratings. One of Hestenes and Carroll's main findings was that there was a relationship between children's preference to play with classmates with disabilities and their overall score for understanding of disabilities.

However, in Hestenes and Carroll (2000), neither children's understanding of disabilities nor reported preference to play with classmates with disabilities was related to their actual social play with classmates with disabilities in the classroom and on the playground. The researchers discussed the possible reasons for the inconsistent results from previous studies (Diamond 2001; Okagaki et al., 1998). One possible reason for the conflicting finding was that Hestenes and Carroll did not include parallel play as an observational category while Okagaki and colleagues merged parallel and social play. In addition, one of the two classrooms observed by Hestenes and Carroll only included children with disabilities during free play (about 3 hours per day) while Diamond (2001) and Okagaki and colleagues (1998) conducted their studies in inclusive classrooms.

Limitations in Previous Research and Purpose of This Study

Although Hestenes and Carroll's (2000) results were inconsistent with the other two research studies (Diamond, 2001; Okagaki et al., 1998), the three studies suggest the possible presence of the following relationships: (1) children's reported willingness to play with hypothetical children with disabilities was related to their play interactions with classmates with disabilities (Okagaki et al.), (2) children's acceptance ratings of hypothetical peers with disabilities were related to their social interactions with classmates with disabilities (Diamond, 2001), and (3) children's understanding of disabilities was related to their reported preference to play with classmates with disabilities (Hestenes & Carroll). In other words, two of the three research studies (Diamond; Okagaki et al.) suggest that positive attitudes toward peers with disabilities may influence children's social interactions with peers with disabilities while Hestenes and Carroll questioned the relationship between children's attitudes and their actual behaviors toward peers with disabilities.

In addition to the inconsistency of research findings, the three research studies also posed several questions that need to be examined in future research. First, the three research teams used a classroom mapping system to observe preschoolers' play. This observation system could help researchers measure how children play together in a classroom by scanning each play area for 10 seconds. However, this system did not allow the researchers to focus on a target child's play behavior throughout an observation session. Thus, it is possible that the three research teams missed some peer interactions between children with and without disabilities by using a scanning technique. For example, while the researchers were observing children in one area of the room, it is possible that a child with a disability may be playing with peers in another area of the room. Therefore, the current study focused on one target child with a disability during each observation session and document which typically developing peers played with the target child during the observation.

Additionally, the measurements used by the three research teams focused on preschoolers' attitudes toward hypothetical peers with disabilities. Only Hestenes and Carroll (2000) conducted sociometric ratings to assess children's playmate preferences of their classmates with disabilities. In other words, the three research studies provided limited information about what participating children thought about their classmates with and without disabilities. Thus, the current study included sociometic peer ratings to assess children's preference to play with their classmates with disabilities. Additionally, child interviews were used to assess children's identification of their classmates as having a disability.

Young children's attitudes toward peers with disabilities have been assessed in several ways such as acceptance of peers with disabilities, understanding of disabilities, and reported preference or willingness to play with peers with disabilities. A focal area of research on young

children's attitudes toward peers with disabilities has been the examination of children's ability to identify disabilities in peers. Research shows that young children are less likely to notice intellectual disabilities and speech delays but they are able to identify some disabilities such as physical disabilities, hearing impairments, and visual impairments (Conant & Budoff, 1983; Diamond & Hestenes, 1996). Two research teams (Conant & Budoff; Diamond & Hestenes, 1996) used photographs of unfamiliar children or asked broad questions (i.e., "Do you know anyone who has a disability?") to investigate young children's understanding about intellectual disabilities. In contrast, Diamond (1993) demonstrated that when preschoolers were shown photographs of their classmates, the majority of them were aware of their peers' intellectual disabilities (i.e., Down syndrome). These results show that interactions with, and observations of, children with disabilities can impact young children's understanding about disabilities and attitudes toward peers with disabilities. However, there is limited research examining the relationship between children's identification of peers as having a disability and their actual behaviors toward those peers with disabilities. Thus, the current study examined the relationship between children's identification of classmates as having a disability and their actual play behaviors with the identified classmates with disabilities.

Another important issue in attitude research is the measuring of young children's attitudes toward peers with disabilities. Researchers have used a variety of methods such as scales, interviews, sociometric ratings, and behavioral observations. However, many of these methods have only been used with older children; there is limited research on the measurement of young children's attitudes toward peers with disabilities (Favazza & Odom, 1996). In addition, most of the attitude research has focused on cognitive and affective aspects of attitudes such as children's identification of peers as having a disability, understanding of disabilities,

acceptance of peers with disabilities, or preference or willingness to play with peers with disabilities. Few research studies have included behavioral aspect of attitudes (e.g., how children behave toward peers with disabilities). Therefore, the current study included the cognitive and affective aspects as well as the behavioral aspect of attitudes toward classmates with disabilities by assessing children's identification of a classmate as having a disability, preference to play with classmates with disabilities, acceptance of hypothetical peers with disabilities, and actual play behaviors with classmates with disabilities.

While researchers have studied children's attitudes toward peers with disabilities, much of this research has focused on older children with limited information about the attitude development of young children, especially preschoolers and kindergarteners (Favazza & Odom, 1997; Stoneman, 1993). To facilitate young children's positive attitudes toward peers with disabilities, it is important to understand what young children think about their classmates with disabilities and how their ideas and thoughts affect their acceptance of and behaviors toward classmates with disabilities. Therefore, the current study was designed to explore the relationship between young children' attitudes and their actual play behaviors toward classmates with disabilities. The following research questions were addressed in the current study:

1. To what extent do preschoolers identify disabilities in their classmates?
2. Is there a relationship between children's identification of a classmate as having a disability and their play behaviors with the classmate?
3. Is there a relationship between children's sociometric ratings of classmates with disabilities and their play behaviors with the classmates with disabilities?
4. Is there a relationship between children's ratings of hypothetical peers with disabilities on a social acceptance scale and their play behaviors with classmates with disabilities?

5. Is there a relationship between children's identification of a classmate as having a disability, sociometric ratings of classmates with disabilities, and their social acceptance of hypothetical peers with disabilities?

Chapter 2

Literature Review

Young Children's Attitude Development

How children come to understand and interact with one another has been conceptualized as the process of attitude formation. A conceptual scheme developed by Triandis (1971) included three components of attitude formation: cognitive, affective, and behavioral components. In the case of young children's attitude formation toward their peers with disabilities, the cognitive component includes knowledge about disabilities and beliefs about the causes and consequences of having a disability. The affective component refers to emotional reactions that occur in response to peers with disabilities. For example, children with disabilities may elicit feelings of fear, anxiety, or pity from their typically developing peers. The behavioral component of attitude formation refers to a predisposition to act in a certain manner. Typically developing children may treat their peers with disabilities as helpless, or may assume such roles as assisting and directing peers with disabilities. Triandis cautioned however, that there is not always a direct relationship between attitudes and behavior; attitudes are related to behaviors in complex ways.

Related to the conceptual scheme provided by Triandis (1971), Stoneman (1993) noted that two questions have been influential in guiding research on young children's attitudes about disabilities: "Do children notice the presence of disabilities in other children?" and "Do children prefer to be with typically developing peers, rather than peers with disabilities?" The first question emphasizes the cognitive component of Triandis' conceptual scheme; being aware of someone's disability is a cognitive prerequisite to forming attitudes toward the person with a disability. Research focusing on Stoneman's second question emphasizes how children behave and interact with peers with disabilities. These two components are discussed next.

Cognitive Aspect

Related to the cognitive aspect of Triandis' conceptual model of attitude formation (1971), researchers have studied young children's awareness of a disability, their thoughts about peers with disabilities, and their understanding about the skill level of peers with disabilities. In one of the early studies to investigate young children's recognition of disabilities, Conant and Budoff (1983), interviewed 21 preschoolers (mean age = 3.4 years) about specific types of disabilities (e.g., blindness, deafness, orthopedic disabilities, intellectual disabilities, psychological disturbance). With regard to each type of disability, the children were asked if they knew anyone with the disability, if they had ever seen a person with the disability, and if they knew the cause of the disability. Results showed that preschoolers were aware of sensory and orthopedic disabilities. However, they had difficulty understanding intellectual disabilities and were not aware of intellectual disabilities until approximately 6.9 years of age.

In the 1990s, Diamond and her colleagues extended this research with a series of studies. In 1993, Diamond conducted a semi-structured interview study with 28 typically developing 4-year-old children to examine how they viewed their peers with disabilities. She asked children to look at photographs of their classmates and then to identify any classmate who (1) did not walk or run the way the other children did, (2) did not talk as well as the other children, and (3) did not behave the way the other children did. Results revealed that the photographs of children with physical disabilities (e.g., cerebral palsy) and children with intellectual disabilities (e.g., Down syndrome) were selected in response to the questions about classmates who did not walk, talk, or behave like other children. However, none of the children with mild-moderate speech and language delays were identified. Two-thirds of participating children responded to a question about *why* their peers with disabilities could not walk, talk, or behave like the other children in

the class. The most common answers suggested *age* as a reason for the child's difficulty walking, talking, or behaving well (e.g., "She is a baby." "When she gets bigger she can walk like everybody else."). Some of the children referred to *specific equipment* (e.g., walker, hearing aid) or *classroom placement* (i.e., "He is in the other classroom.") as a reason for limited language and motor abilities. Another category of explanations was related to *accidents* or *other traumas* (i.e., "He broke his leg." "He can't talk because he got hit in the mouth.").

Based on these results, Diamond (1993) discussed how young children organize and structure their knowledge about disabilities to reflect their attempts to assimilate a new phenomenon (disability) into already existing cognitive structures such as age, immaturity, or accident. Studies such as this one set the stage in suggesting that the early childhood years are a prime time to intervene on children's attitudes about disabilities as many of the preschoolers in Diamond's study were beginning to recognize and think about disabilities.

In a subsequent study, Diamond and Hestenes (1994) investigated typically developing preschoolers' understanding of their peer's hearing loss. These researchers interviewed 24 preschoolers in an inclusive preschool at the beginning of the year and again three months later. Thirteen children (mean age = 48.2 months) were enrolled in a class that included a child with severe hearing loss, and 11 children (mean age = 44.5 months) were enrolled in a class that included two children with disabilities but without hearing loss. At the beginning of the year, the majority of children in both classes reported that children could speak even if they could not hear. But three months later, the children in the class that included a child with hearing loss were significantly more likely than the other 11 children to believe that hearing loss impacted a child's ability to speak. The comments from children in the class which included a peer with a hearing loss indicated that they were aware that their peer used special equipment and was not able to

hear even though some children had misperceptions about the equipment (i.e., “He can’t hear if he doesn’t have his headphones on.” and “He has that thing on-you know, earphones-he’s got music on his neck so he can’t hear.”). These findings suggested that interactions and observations during the school day impacted children’s understanding of their peer’s disability.

In a third study, Diamond and Hestenes (1996) explored preschoolers’ perceptions of different disabilities and children’s understanding of the strengths and skills of children with different disabilities. The researchers interviewed 46 preschoolers using photographs of unfamiliar children. The majority of children (75%) commented on the physical disabilities represented in the photographs. Also, some children (41%) commented on a child’s visual impairment while only a few children (11%) mentioned hearing impairment as they looked at the photographs. None of the children commented on the physical characteristics of children with Down syndrome that were represented in photographs. Also, children rated the photograph of a child with a physical disability as having lower motor skills than the photographs of typically developing children or children with visual impairments, hearing impairments, or Down syndrome. The child with a hearing loss who was represented in a photograph received lower competency ratings for language skills than did (photographs of) children with other disabilities or the typically developing child.

To investigate kindergarteners’ understanding about, and attitudes toward, children with disabilities, Dyson (2005) interviewed 77 typically developing children in inclusive kindergarten classrooms in Canada. The participating children were asked 6 questions related to people with disabilities. In response to a question about understanding of disabilities (i.e., Tell me everything you know about a person who has a disability or special need), 25% of the children mentioned physical disabilities and 16% described people with disabilities as ones who needed assistance

and equipment. When asked if disabilities are contagious, 78% of the children replied "No." Most participants (88%) responded that they thought people with disabilities were different from themselves, citing differences in appearance and abilities. In addition, 83% of the children reported that they liked people with disabilities because of their personality (e.g., "They are nice.") or skills (e.g., " I can help them."). Most participants (91%) reported that they were not afraid of people with disabilities and half of the children reported that they had a friend with a disability. This study showed that overall typically developing kindergarteners had positive attitudes toward individuals with disabilities.

In summary, it is clear that during the early childhood years, children begin to recognize their peers' differing abilities, understand the varying competencies of their peers, and identify things that might be difficult for a hypothetical peer with a disability. Research shows that young children are aware of some disabilities such as physical disabilities, hearing impairments, and visual impairments. Findings surrounding children's attitudes toward peers with specific disabilities, such as intellectual disabilities, are mixed. For example, Conant and Budoff (1983) and Diamond and Hestenes (1996) reported that young children do not consistently notice intellectual disabilities. However, these two teams of researchers used photographs of unfamiliar children or asked broad questions (i.e., "Do you know anyone who has a disability?") to investigate young children's understanding about intellectual disabilities. In contrast, Diamond (1993) demonstrated that when preschoolers were shown photographs of their classmates, the majority of them were aware of their peers' intellectual disabilities. These findings suggest that interactions with (and observations of) children with disabilities impact young children's understandings about disabilities and attitudes toward their peers with disabilities. It appears that the early childhood years are an ideal time to facilitate children's attitude development toward

peers with disabilities. For researchers and educators alike, understanding attitude development is a critical step in designing interventions that encourage positive attitudes (Diamond, 1993) and promote a community of acceptance. Such positive attitudes can impact interactions with others throughout the life span.

Affective and Behavioral Aspects

Research on the affective and behavioral aspects of attitude formation discussed by Triandis (1971) has been conducting two methods: investigating young children's stated willingness or preference to play with peers with disabilities and examining the relationships between children's stated acceptance of, and their actual interactions with, peers with disabilities. For example, Diamond and Hestenes (1996) investigated 46 preschoolers' willingness to be friends with hypothetical peers with disabilities. Results showed that although the majority of the preschoolers (ages 3-6) were aware of the disabilities represented in the photographs, their willingness to be friends did not appear to be influenced by the hypothetical children's disabilities. Specifically, 69% of study participants reported that they would be friends with a child in a photograph who had a hearing loss, 71% reported that they would be friends with a child with a physical disability, Down syndrome, or a visual impairment, and 77% indicated that they would be friends with a child in a photograph who did not appear to have a disability (i.e., a "typically developing child"). Okagaki and her colleagues. (1998) also found no differences in children's willingness to play with hypothetical peers with varying abilities as their study participants indicated that they were equally willing to play with hypothetical peers with and without disabilities.

Additionally, some researchers have investigated preschoolers' stated preference to play with their classmates with disabilities (Diamond, Le Furgy, & Blass 1992; Odom et al., 2006).

Diamond and her colleagues investigated 25 typically developing preschoolers' playmate preference using sociometric peer ratings. Odom and his colleagues also examined the acceptance/rejection of 80 preschoolers with disabilities by their typically developing peers using sociometic peer ratings. These two research studies show that preschoolers with disabilities receive significantly lower sociometric ratings than their typically developing peers. Also, Odom and his colleagues reported that among the 80 participating children with disabilities, none of the children with autism-pervasive developmental delay, social emotional, behavioral, or attention-deficit disorder were in the accepted group and relatively few children with speech delays or orthopedic impairments were in the rejected group.

In addition to children's affective responses, several researchers have examined the relationship between young children's social acceptance of hypothetical peers with disabilities and their actual interactions with their peers with disabilities (Diamond, 2001; Hestenes & Carroll, 2000; Okagaki et al., 1998). Okagaki et al. (1998) measured 36 typically developing preschoolers' social play with classmates with and without disabilities, using a 2 second look and 15 second record sweep method. The children were enrolled in three inclusive classrooms; 50 observations were recorded for each child during free play. The observers coded whether the target child (mean age = 55.2 months) was engaged in play behaviors with a peer (including social play and parallel play) and whether the child was playing with a typically developing peer or a peer with a disability. The researchers also interviewed the children to assess their social acceptance of hypothetical peers with and without disabilities and their willingness to play with the hypothetical peers. Results showed that children who expressed more willingness to play with hypothetical peers with disabilities were more likely to interact with classmates with disabilities during free play.

Diamond (2001) also examined the relationship between children's ideas, emotional understanding, and social contact with classmates with disabilities by observing 45 typically developing preschoolers (mean age = 52.4 months) during free play. Children were observed during 10-minute intervals over a 6-week period. An average of 49 observations were conducted on each child. Social contact was defined as verbal or physical exchanges or sustained visual regard. Diamond also interviewed participating children to assess their acceptance of hypothetical peers with disabilities and their emotional sensitivity to certain social situations. Results showed that children who had social contact with classmates with disabilities were more sensitive to the display of emotions and were more accepting of hypothetical peers with disabilities than were children who were observed playing only with typically developing peers.

Additionally, Hestenes and Caroll (2000) observed 29 typically developing preschoolers (mean age = 55.2 months) using a scan sampling technique. They selected one area of the classroom or playground to begin each observational session and then proceeded in a clockwise direction until the map was completed. During free play, observers watched each area (that contained at least one child) for 10 seconds and recorded the following information: children who were present, their level of play (e.g., solitary, cooperative), and whether or not a teacher was present. At least 43 observations were gathered on each child. The researchers also interviewed all children to assess their understanding of hypothetical peers with disabilities and the children completed sociometric ratings on their classmates. Results revealed a relationship between children's stated preference to play with classmates with disabilities and their understanding of hypothetical peers' disabilities. Reporting contradictory results to previous research, Hestenes and Carroll found that neither understanding of disabilities nor stated preference to play with classmates with disabilities were related to children's social play with

classmates with disabilities in the classroom and on the playground. These researchers discussed the possible reasons for the inconsistent results from previous studies (i.e., Diamond 2001; Okagaki et al., 1998). One possible reason for the conflicting finding was that Hestenes and Carroll did not include parallel play as an observational category while Okagaki and colleagues merged parallel and social play. In addition, one of the two classrooms observed by Hestenes and Carroll only included children with disabilities during free play (about 3 hours per day) while Diamond (2001) and Okagaki et al. (1998) conducted their studies in inclusive classrooms.

In summary, with a focus on the affective aspect of attitude development, the majority of typically developing children in the studies just reviewed expressed a willingness to be friends with hypothetical peers with disabilities (Diamond & Hestenes, 1996; Okagaki et al., 1998). However, some researchers reported that typically developing children were less likely to rate their classmates with disabilities on the soiometrics as someone who they liked to play with compared to their typically developing classmates (Diamond et al., 1992; Odom et al., 2006). Findings surrounding the relationships between children's attitudes and their actual behaviors toward peers with disabilities are mixed. Two research studies (Diamond, 2001; Okagaki et al., 1998) revealed that preschoolers who were more accepting of hypothetical peers with disabilities were more likely to play with their classmates with disabilities, while Hestenes and Caroll (2000) suggested that neither children's understanding of disabilities nor stated playmate preference with classmates with disabilities was related to their social play with classmates with disabilities. However, noteworthy is the fact that there has been limited research on behavioral aspects of young children's attitudes toward peers with disabilities.

Theories of attitude development suggest that cognitive, affective, and behavioral characteristics interact in the development of attitudes toward individuals with disabilities

(Stoneman, 1993; Triandis, 1971). However, attitudes can be formed as a result of one of these three processes alone (Diamond, 2001). Future research should include more emphasis on behavioral aspect of attitude formation and an examination of how the three aspects (i.e., cognitive, affective, behavioral) are related to each other. The early childhood years are an important time period for studying the relationship between individual, familial, and environmental influences on children's cognitive, affective, and behavioral characteristics. Additional research should examine how these variables, alone or in combination, contribute to the development of positive attitudes toward individuals with disabilities.

Measures of Young Children's Attitudes

An important area of research is the measuring of young children's attitudes toward peers with disabilities. Researchers have used a variety of methods such as scales, questionnaires, interviews, sociometric peer ratings, and behavioral observations to assess children's attitudes. However, many of these methods have been used with older children; there is limited research on the measurement of young children's attitudes toward peers with disabilities (Favazza & Odom, 1996). This limitation is not a result of disinterest in young children's attitudes. Rather it stems from the methodological challenges that researchers face when assessing young children's attitudes (Stoneman, 1993). For example, when studying the attitudes of adults or older children, attitudes can be inferred from what people say about a referent or from the feelings they describe. However, it can be challenging to ask preschoolers what they think or how they feel about individuals with disabilities. Thus, very few studies have reported reliability or validity data on their assessment of young children's attitudes. In the following sections how researchers have assessed young children's attitudes toward peers with disabilities is discussed. Table 1

shows a summary of each measure used in research studies related to young children's attitudes toward peers with disabilities.

Measures for Cognitive Aspect of Attitudes

Identification of disabilities. Researchers have assessed cognitive aspects of young children's attitudes toward peers with disabilities by considering the following three variables: children's identification of disabilities, understanding of disabilities, and acceptance ratings of peers with disabilities. These three cognitive aspects of children's attitudes toward peers with disabilities have been assessed using scales or interviews. To assess children's identification of disabilities in their peers, researchers used child interviews (Conant & Budoff, 1983; Diamond, 1993). Conant and Budoff interviewed 21 preschool children by asking them if they knew anyone with a disability. Diamond interviewed 28 typically developing preschool children to investigate how they viewed their peers with disabilities. She placed photographs of all the children in the class on the table and then asked the participating children to show her anyone who (1) did not walk or run the way the other children did, (2) did not talk as well as the other children, and (3) did not behave the way the other children did. If a child identified a classmate in any of the above questions, the researcher asked for additional rationales about the response (e.g., "Why do you think he/she can't talk so well?").

Understanding of disabilities. While there has been limited research related to young children's identification of disabilities, much more research studies have focused on young children's understanding about peers with disabilities (Diamond & Hestenes, 1994, 1996; Diamond et al., 1997; Favazza & Odom, 1996). Young children's understanding of disabilities has been assessed in two ways: (1) children's thoughts or understanding about a specific

disability or individuals with disabilities and (2) children's ratings of the competencies of hypothetical peers with a certain disability.

To assess preschoolers' thoughts and understanding about a disability, Diamond and Hestenes (1994) investigated children's understanding about peers with hearing impairments. The researchers interviewed 24 typically developing preschool children using 8 questions designed to assess children's understanding of hearing, hearing loss, and sign language (e.g., "What do we use to hear with?", "Can you think of some times when you can't hear?", "How can you tell if someone can't hear?", "Have you ever heard of sign language?").

In 1996, Diamond and Hestenes extended this research to other disability categories. Forty-six preschool children were interviewed using five different photographs showing a preschool-age girl with one of the following disabilities: physical disability, visual impairment, hearing impairment, and Down syndrome. The fifth photograph showed a typically developing preschooler. The researchers presented the children with one of the 5 photographs in random order and asked two open-ended questions: (1) "Tell me about the girl. Could you be friends with the girl in the photograph; why or why not?" and (2) "Why can't she walk, see, hear, or do thing as well as you? How did it happen?"

In another interview study, Diamond and her colleagues (1997) asked 29 preschool children to share their ideas about physical and sensory disabilities. Using dolls with different disabilities (e.g., physical disability, hearing loss, and visual impairment), the interview questions focused on children's ideas about the immediate and long-term consequences of each disability (e.g., "Will she be able to walk when she gets older?"), adaptive equipment, and sign language.

To explore kindergarteners' understanding, perceptions, or ideas about individuals with disabilities, Favazza and Odom (1996) included group interviews with kindergarten children who completed the *Acceptance Scale for Kindergartners (ASK)* as part of their research study. The children were asked what it meant to have a disability. After a child responded, the interviewers encouraged him/her to elaborate by asking another question such as "What else do you know about someone who has a disability?"

In another interview study to examine kindergarteners' understanding of disabilities, Dyson (2005) interviewed 77 typically developing kindergarten children individually with an open-ended questionnaire, a revised version of the *Primary Student Survey of Handicapped Persons* (Esposito & Peach, 1983). This survey consists of 6 questions (e.g., "Tell me everything you know about a person who has a disability or special need", "Do you think that people who have disabilities or special needs seem a lot like you, or do they seem different from you? Why or why not?", "Are you ever afraid of people who have disabilities or special needs? Why or why not?"). Children were encouraged to talk freely and the interviewers asked additional questions to help children clarify their responses.

Another way to assess preschool children's understanding of disabilities is to ask them to rate the competencies of a hypothetical peer with a certain disability. Many researchers (Diamond & Hestenes, 1996; Diamond et al., 1997; Okagaki et al., 1998) used the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* adapted from Harter and Pike (1984) to assess perceived competence. This scale makes use of three dolls with different disabilities (physical disability, hearing loss, visual impairment). A fourth doll represents a child without a disability. This scale was designed to assess how competent preschoolers believed each of the dolls were in three areas: motor, language, and peer

relationships (e.g., “Do you think this girl would be good at running or not so good at running?”).

In summary, many researchers used dolls or pictures when interviewing preschool children to assess children’s perceptions of peers with disabilities (Diamond, 1993; Diamond & Hestenes, 1996; Diamond et al., 1997; Diamond et al., 2008). Interview questions varied depending on the purpose of the research questions (i.e., identification of disabilities, understanding of disabilities, or competency ratings of hypothetical children with disabilities). Mostly, researchers have used semi-structured interview questions although Dyson (2005) used a questionnaire. In addition, many of the research studies just reviewed were conducted by Diamond and her colleagues. Most of this research was conducted more than 10 years ago and typically developing children were asked about their thoughts or understanding of hypothetical peers with disabilities using dolls or pictures, rather than discussing their classmates or real peers with disabilities. Therefore, replicating the research findings, with a focus of real peers and classmates with disabilities, would add to the current literature on young children’s attitudes toward peers with disabilities.

Acceptance ratings. One additional method used to assess cognitive aspects of attitudes toward peers with disabilities involves scales or questionnaires designed to measure children’s acceptance of peers with disabilities. Many researchers have used scales such as the *Social Distance Scale* (Hazard, 1983), the *Chedoke-McMaster Attitudes toward Children with Handicap* (CATCH; Rosenbaum, Armstrong, & King, 1986), and *the Acceptance Scale* (Voeltz, 1980). These three scales were developed for use with older children so the content of items, test-taking skills (i.e., reading, recording responses), test format (i.e., forms used for recording responses), and administration format (i.e., group size, instruction) are not appropriate for

younger children (Favazza & Odom, 1996). Given the limitations of existing scales, Favazza and Odom developed the *Acceptance Scale for Kindergarteners (ASK)* by modifying Voeltz's *Acceptance Scale*.

The ASK has 18 questions such as "Would you like to be a good friend with a kid with a disability?" and "Would you like to spend your recess with a kid with a disability?" The vocabulary and expressions in Voeltz's scale were revised to address kindergarten age children's comprehension. Several changes were made to Voeltz's scale related to the presentation of items (i.e., using a question format), group size for administration (i.e., 6 to 7 children at one time), and the protocol for recording child responses (i.e., color-coded answer sheet, visual representation of the words *yes, no,* and *maybe*). The reliability and validity of the ASK was examined with 188 kindergarten children (approximately 88 % of the children were Caucasian). Results showed a substantial correlation of 12 of 18 items with the total ASK score. For the reliability of the ASK, an overall Cronbach alpha coefficient of .79 and a Spearman-Brown split-half of .76 were found (Favazza & Odom, 1996).

However, ASK administrators reported consistent problems that children showed during testing: difficulty following directions, inattention, and questions raised about terminology (e.g., "handicap") (Favazza, Phillipsen, & Kumar, 2000). The researchers made several changes to the original ASK based on reports from test administrators. The ASK was revised and the reliability of the *Acceptance Scale for Kindergartners-Revised* (*ASK-R*) was examined with a more diverse representation of children including a large portion of African American children and children of low socioeconomic status (SES). Of 48 participating kindergartners, 25% were Caucasian and 75% were African American. The reliability of the *ASK-R* revealed an overall Cronbach's alpha

coefficient of .87 and a Spearman-Brown split-half of .91. Revisions to the *ASK-R* were field-tested across a three-year period.

While some attitude scales such as the *ASK-R* require kindergarten children to listen to questions and respond on answer sheets, other researchers have used photographs, pictures, or dolls when administrating scales or questionnaires to assess young children's attitudes toward individuals with disabilities. For example, Piercy, Wilton, and Townsend (2002) used two scales, *Peer-Acceptance Scale* and *Social Distance Scale* to measure the attitudes of 51 children. All participating children were enrolled in kindergarten to Grade 2. The *Peer Acceptance Scale* was adapted from Moe, Nacoste, and Insko (1981). The scale includes 5 items: (1) Would you feel like helping this child if they were hurt at school?, (2) Would you feel like sharing a secret with this child?, (3) Would you feel like playing with this child?, (4) Would you say "hello" to this child?, and (5) Would you want to work with this child in class? For each item, children are asked to indicate *yes* (score=2), *maybe* (score=1), or *no* (score=0). As each item was presented, children were given a photograph of one of their classmates with disabilities. This process was continued until each typically developing child completed the entire scale for all their classmates with disabilities.

Piercy and her colleagues (2002) also used the *Social-Distance Scale* adapted from Fenrick and Peterson (1984). This scale provides an index of the extent to which children without disabilities wished to be "close to" their peers with disabilities. It consists of 6 items (e.g., "I think that the children in Miss Brown's class (special education class) should go to a different school than this one", "It would be alright with me if one of the children from Miss Brown's class worked in my room at school for half of the day"). For each item, children were asked to respond by saying *yes*, *maybe*, or *no*.

The majority of Diamond and colleagues' research (Diamond, 1994, 2001; Diamond & Hestenes, 1996; Diamond et al., 1997; Hestenes & Carroll, 2000; Okagaki et al., 1998) used an adapted version of the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter & Pike, 1984), to investigate preschoolers' attitudes toward peers with disabilities. This scale is divided into two sections: (1) competency ratings of hypothetical peers with disabilities and (2) acceptance ratings of hypothetical peers with disabilities. Some researchers used both sections (Diamond & Hestenes; Diamond et al., 1997; Okagaki et al.). Hestenes and Carroll used only the first part of this scale, *Competency Ratings of Disabilities* and Diamond (2001) used only the second part of this scale, *Social Acceptance Scales*. To assess social acceptance of peers with disabilities, children were shown a doll representing a child with a physical disability and two drawings (a child who engaged in an activity with other children and a child who was apart from the group). The researcher explained each of the drawings and then asked children to point to the drawing that best described the doll in a wheelchair (e.g., If this doll is a real girl, do you think she would have a lot of friends to play with or not very many friends?). After choosing a drawing, children were also asked if the doll in a wheelchair was "a lot like" or "a little bit like" the child in the drawing. The reliability of this scale, as assessed by test-retest correlations, ranged from .78 to .94.

In summary, various scales and questionnaires have been used to assess young children's attitudes toward peers with disabilities. Scales such as *Competency Ratings of Disabilities* and *Social Acceptance Scales* used by Diamond and her colleagues focused on cognitive aspect of attitude while some scales (e.g., *ASK-R*, *Peer Acceptance Scale* and *Social-Distance Scale*) included both cognitive and affective aspects of attitudes. In addition, many researchers have used pictures, photographs, or dolls when administrating attitude scales to help young children's

understanding of disabilities. Although researchers have used many scales and questionnaires, only a few of these studies included reliability data (e.g., *ASK-R, Adapted version of Pictorial Scale of Perceived Competence and Social Acceptance for Young Children*). Thus, future research needs to examine the reliability and validity of the scales used. Also, additional methods to assess young children's attitudes toward peers with disabilities should be developed.

Measures for Affective and Behavioral Aspect of Attitudes

Related to the affective aspect of attitude formation provided by Triandis (1971), researchers have assessed children's stated preference to play with peers with disabilities. To assess children's preference to play with their peers with disabilities, many researchers have used sociometric peer ratings (Diamond et al., 1992; Hestenes & Carroll, 2000; Odom et al., 2006). For example, Diamond and her colleagues (1992) investigated playmate preferences of 25 typically developing preschoolers using sociometric peer ratings. The participating children were shown a photograph of each child in their classroom and asked to rate each child as "I like to play with XX (child's name) a lot," "I like to play with XX (child's name) a little," or "I do not like to play with XX (child's name) at all."

Similarly, Odom and his colleagues (2006) used sociometric peer ratings to examine the acceptance/rejection of preschool children with disabilities by their typically developing peers. These researchers taught typically developing peers of 80 preschoolers with disabilities to sort pictures of foods and then toys into one of the three boxes along a 3-point continuum of "like to eat (or play with) a lot, a little or not at all." Each box represented 1 of the 3 points on the continuum with a happy face (like a lot), neutral face (like a little), or a sad face (don't like at all). After practicing this task with pictures of food and toys, the children were asked to sort pictures of all the children in their classroom, using the same three boxes.

Another way to measure the affective aspect of attitude is to ask children about their willingness to play with hypothetical peers with disabilities. Okagaki and her colleagues (1998) investigated preschool children's willingness to play with hypothetical peers with disabilities using an adaptation of *the Social Problem-Solving Test-Revised* by Rubin (1988). This scale was designed to assess children's willingness to have a hypothetical child as a play partner in five situations: two situations included a child with a physical disability, two situations included a child with a language disability, and one situation included a typically developing child. Dolls were used to represent the hypothetical play partners. The interviewer explained a hypothetical situation with a doll (e.g., "David uses a wheelchair because his legs don't work. He moves the wheels forward and backward to get around the room. This is David's first day at school. He wants to be friends with the other children. He wants to play with you") and then asked the child if he/she would be friends with the doll.

Diamond and her colleagues (2008) also used six vignettes to assess children's decisions to include hypothetical peers with and without disabilities in an activity. Two dolls were used with one representing a child with a physical disability and one representing a typically developing peer. The six vignettes varied in terms of motor skill demands: two of the vignettes described activities that required substantial motor skills (e.g., kicking a ball, dancing), two vignettes focused on more modest motor skill requirements (e.g., completing a puzzle on the floor required the teacher's help to move the peer with a physical disability from a wheelchair to the floor), and two vignettes included activities that required minimal motor skills (e.g., playing with legos at the table). The researchers began the interviews by explaining an activity situation and offering a suggestion about how each child might participate. For example, in a dancing activity, the doll in the wheelchair could dance by moving his arms while the doll that was

standing could dance with his arms and his legs. After choosing a doll to play with, the child was asked to explain his/her reasons for the selection ("Why did you choose this girl/boy?").

Although researchers have used a variety of methods to assess young children's attitudes toward peers with disabilities, such methods as scales, sociometric peer ratings, and interviews rely solely on children's self-report. Thus, it is possible that children provide responses they believe would please the examiner or that are socially appropriate. To address this issue, some researchers have conducted direct observations of peer interactions to determine if young children's self-reports on such measures are consistent with their actual behaviors toward children with disabilities (Favazza & Odom, 1996). A few research studies have included an examination of the relationship between young children's stated acceptance and their actual social interactions with peers with disabilities (Diamond, 2001; Hestenes & Carroll, 2000; Okagaki et al., 1998).

To date, research suggests that young children are aware of disabilities in their peers (Diamond, 1993). The recognition and understanding of peers with disabilities can be influenced by their observations of, or interactions with, their peers with disabilities in inclusive classrooms (Diamond & Hestenes, 1994). The ways in which children think and respond about peers with disabilities may influence their play with peers with disabilities (Diamond & Tu, 2009). Children who have more positive attitudes toward, and express a willingness to play with hypothetical peers with disabilities tend to interact more with their classmates with disabilities than do other children (Diamond, 2001; Okagaki et al., 1998). However, limited research focuses on the relationships between young children's attitudes and their actual play behaviors toward peers with disabilities. Therefore, research needs to target these important and timely issues to gain a better understanding of young children's attitudes and play behaviors toward peers with

disabilities, ultimately to promote positive peer relationships between children with and without disabilities.

Chapter 3

Methods

Participants and Settings

This study was conducted during the spring semester in three inclusive classrooms located in two different public preschools in central Illinois. The recruitment criteria were preschool classrooms that included at least two children with IEPs. Following university procedures, the researcher submitted a school research proposal to the Office of School and University Relations, along with appropriate consent forms for the University IRB (see Appendix A for IRB approval). Once the research was approved, the researcher contacted two principals who were interested in this study (see Appendix B for a sample email that was used for recruitment). Then, the researcher described study procedures to the principals and asked them to help with the recruitment of classroom teachers. One of the principals forwarded an email from the researcher to all classroom teachers in the center to determine which teachers were interested in assisting with this study. There was only one teacher in this preschool who served at least 2 children with IEPs and was interested in this study. The researcher met with the teacher to explain the study procedures and ask if she would be willing to help recruit child participants and allow the researcher to complete several assessments and observe children's play over a 10-week period. The teacher agreed to help with this study.

The second principal suggested four teachers who served children with IEPs in her center as possible participants in this study. The researcher contacted the four teachers via email and met individually with each of them to explain the research procedures and ask if they would be willing to help with recruitment. All four teachers agreed to help, however, the free play times

(e.g., center time) in the four classrooms were scheduled at the same time. Thus, only one classroom that included children with the most significant disabilities in the center was selected.

In addition to contacting the two preschool principals, the researcher also emailed 2 teachers in other local preschools and 3 directors in child care centers and a Head Start program. One teacher who served at least 2 children with IEPs in both her morning and afternoon classes was willing to help with this study. Therefore, three teachers and 4 different classes of preschoolers, located in three public preschools, agreed to assist with this study. These 3 teachers sent 58 consent forms home to parents of students in their classrooms using children's school folders (see Appendix C for the consent form). However, one of the teachers received only 5 signed consent forms from the parents in her classroom after 3 times of mailing. Thus, this classroom was dropped, leaving two teachers in two different preschools to assist with this study. This study was conducted in these two teachers' three classes of students: one teacher's morning classroom and the other teacher's morning and afternoon classroom. Each of the two participating teachers received a stipend of $100 cash per classroom following completion of the study.

All three classrooms operated for two and a half hours on Monday through Friday. The classroom schedules were similar and included circle time, table activity, center time, outdoor play, and snack time. Each classroom included one teacher and one teaching assistant. The two teachers had master's degrees in Early Childhood Special Education. One classroom also included a personal assistant for a child with a health impairment. Therefore, two classroom teachers, two teaching assistants, and a personal assistant assisted in this study. All adult participants were female and Caucasian except for one African American teaching assistant.

Across the three classrooms, a total of 45 children were enrolled. Forty-four parents (97.8%) consented for their children to participate in this study. Classroom A included 16 children (8 boys and 8 girls). The children's mean age was 59.6 months, with a range from 51 to 68 months. There were 6 Caucasian, 7 African American, and 3 Hispanic children in Class A. Classroom B included 15 children (7 boys and 8 girls). Their mean age was 61 months, with a range from 53 from 68 months. There were 8 Caucasian, 3 African American, and 4 Hispanic children in Class B. The four Hispanic children received English as Second Language (ESL) services in the school at the time of the study. Classroom C included 14 children (8 boys and 6 girls). Their mean age was 61 months, with a range from 51 to 68 months. There were 7 Caucasian, 6 African American, and 1 Hispanic children in Class C. Additional information about the participating classrooms and children is presented in Table 2.

Each of the three classrooms included 4 children with Individualized Education Plan (IEP)s. Classroom A included a child with a health impairment (seizure), a child with autism, and two children with developmental delays. The child with the seizure disorder wore a helmet, had a personal assistant, and communicated using sounds and gestures. The child with autism had limited expressive language and had difficulty interacting with peers. Classroom B included a child with Down syndrome, a child with a hearing impairment, and two children with developmental delays. The child with Down syndrome communicated using sounds and gestures, and he sometimes engaged in challenging behaviors (e.g., hitting or pushing peers, throwing toys). The child with a hearing impairment wore a hearing aid but she appeared to have limited difficulty communicating or interacting with peers. Classroom C included a child with cerebral palsy, a child with autism, and two children with developmental delays. The child with cerebral palsy was in a wheelchair and communicated using sounds and gestures. The child with autism

also communicated using sounds and gestures, and he sometimes demonstrated challenging behaviors (e.g., pushing, taking toys from peers, screaming and running).

In this study, children with disabilities were identified as children who had IEPs (and therefore diagnosed disabilities or developmental delays). In the three classrooms, there were no children who had speech-only IEPs. All children with and without disabilities in the classrooms, whose parents returned signed consent forms, participated in all aspects of this study. However, three children with the most significant disabilities per classroom were selected as target children for play observations.

To identify the severity of disability for the children with IEPs, the *ABILITIES Index* (Simeonsson & Bailey, 1991) was used. This tool was designed to describe the functional capabilities of individuals with diverse developmental disabilities, using a rating scale format (1-6) to classify functional capability from "normal" to "profound" in 9 domains (e.g., hearing, behavioral social skills, intellectual functioning, limbs, intentional communication, muscle tone, integrity of physical health, vision, and structural status). The two participating teachers completed the *ABILITIES Index* for each of their students with IEPs. The total score from all 9 domains was calculated for each child. Based on the teachers' ratings, three children with disabilities who received the highest scores in each classroom were selected as target children. Therefore, nine children with disabilities across 3 classrooms were selected as target children for play observations. However, parent consent was gathered from all 44 participating children's parents in order to observe and record who were play partners of those 9 target children with disabilities and who therefore interacted with them during free play time. Additional information on the 9 target children is presented in Table 3.

Measurements

Sociometric peer ratings. To investigate children's preferences to play with classmates, *Sociometric Peer Ratings* (Asher, Singleton, Tinsley, & Hymel, 1979) were conducted with each participating child. Sociometric peer ratings have been found reliable with preschool-age children (Balda, Punia, & Punia, 2002) and have been utilized as a tool to indicate the social status of children with disabilities in inclusive programs (Sale & Carey, 1995).

To assess children using the *Sociometric Peer Ratings*, individual photographs were taken of each participating child. At the same time, three boxes were created with a corresponding image and label of a happy face ("like to play with a lot"), a neutral face ("like to play with a little"), and a sad face ("do not like to play with"). First, children were asked to sort pictures of foods and then toys into one of the three boxes showing a 3-point continuum of "like to eat (or play with) a lot, a little or not at all." After practicing this task with pictures of food and toys, children were asked to sort photographs of their classmates into the same three boxes. Each child was shown a photograph of each of his/her classmates and asked a question, "Do you like to play with XX (child's name) a lot, a little, or not at all?" (Diamond et al., 1992; Odom et al., 2006). A negative rating ("do not like") received a score of 0, a neutral rating ("like a little") received a score of 1, and a positive rating ("like a lot") received a score of 2. Total scores were calculated for each child.

Social Acceptance Ratings. The *Social Acceptance Ratings* task was adapted by Diamond (1994) from the *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* (Harter & Pike, 1984). The *Social Acceptance Ratings* was designed to assess children's acceptance of a child with a physical disability on three items.

This scale has been shown to be reliable with test-retest correlations ranging from .78 to .94. For each of the three items (see Table 4), one side of a page shows a line drawing of a child who is engaged in an activity with other children, and the other side shows a line drawing of a child who is apart from the group of children (see sample drawings of *Social Acceptance Scale* in Appendix D). The placement of the drawings on the right or left side of the page was counterbalanced across items to control for position preferences in children's selections. A doll representing a child in a wheelchair also was used in this assessment task. The researcher pointed to one line drawing and explained, "This boy does not have many friends to play with." Then the researcher pointed to the second drawing and stated, "This boy has many friends to play with." Next, each participating child was asked to point to the drawing which best described the doll with a physical disability (e.g., "If this doll were a real boy, do you think he would have a lot of friends to play with or not very many friends?"). After the child chose a drawing, he or she was asked if the doll is "*a lot* like" or "*a little bit* like" the child in the drawing that he/she selected.

Children received a score of 1 if they thought the doll would be "a lot like" the boy who was alone, 2 points if they thought the doll would be "a little bit like" the boy who was alone, 3 points if they thought the doll would be "a little bit like" the boy who was playing with others, and 4 points if they think the doll would be "a lot like" the boy who was playing with others. Children's scores across the three test items were averaged. Higher scores represented higher levels of acceptance. There were separate versions of the scale for boys and girls with line drawings and wording that were gender specific. The researcher also used dolls that were matched according to each child's gender and ethnicity (see photographs of dolls in wheelchair in Appendix E). Thus, there were dolls for boys and girls representing African American and Caucasian children. For Hispanic children, dolls representing Caucasian children were used.

Child interviews. To assess children's identification of disabilities in their classmates, individual interviews were conducted with each child. The researcher showed individual photographs of all the children in the classroom to each child. The photographs were ordered alphabetically and the order was the same for all children in each classroom. Each child's picture was named and then placed on the table until all classmates' photographs were placed on the table. Children were asked the following questions taken from Diamond (1993): Can you show me if there is anyone in your classroom who (1) does not walk or run the way the other children do?, (2) does not talk as well as the other children, and (3) does not behave the way the other children do? If a child pointed to, or picked up, a photo of a classmate in response to the first question, the researcher asked the child for an explanation about each photograph that he/she selected (e.g., "Why do you think this child cannot walk so well?"). Once the child had finished identifying all classmates who he/she thought did not walk or run like other children, the researcher asked the next question ("Can you show me if there is anyone in your classroom who does not talk as well as the other children?"). Following the same procedures described above, if a child identified a classmate in response to the second question, the researcher asked the child for an explanation about each photograph that he/she selected (e.g., "Why do you think this child cannot talk so well?"). Then, the researcher asked the last question ("Can you show me if there is anyone in your classroom who does not behave the way the other children do?"). If a child identified a classmate in response to the third question, the researcher asked the child for an explanation about each photograph that they selected (e.g., "Why do you think this child does not behave the way the other children do?"). All children's responses were audio-recorded. The recorded responses were transcribed by the researcher and the audiotapes were erased as soon as the transcription accuracy was assured.

Play observations. Children's play was observed during free play situations in the classrooms (e.g., center time, free choice time) over a 10-week period. The play behaviors of each target child with a disability (n = 3 per classroom) were recorded during 10-minute observation sessions divided into 15-second intervals. The goal was to collect data during 20 observations for each target child with a disability over the course of the study. However, a child with autism in Class A (C2) was dropped due to low attendance. Therefore, each of the 8 remaining target children with disabilities were observed for a minimum of 17 times (170 minutes) throughout the 10-week period with no more than 3 observations occurring per child during any one week.

In addition, two typically developing children per classroom were observed based on teachers' nominations of children who had good attendance records and showed typical preschool-age play behaviors. The two typically developing children in each classroom were observed when target children with disabilities were absent or when the researcher had additional time to observe during free play (i.e., the length of free play was long enough to support additional observations). Each of the six typically developing children were observed at least 5 times (a minimum of 50 minutes each) across the study. Data from the two typically developing children in each classroom were used to compare the percentages of each target play behavior (i.e., solitary play, parallel play, associative/cooperative play) between children with and without disabilities. Therefore, across the three classes, data were gathered on 6 typically developing children for a total of 380 minutes. The number of observations for each target child with a disability and the six typically developing children are presented in Table 5.

To assess children's play behaviors, partial-interval time sampling was used. This form of time sampling has been described as useful for measuring nondiscrete behaviors (Hall &

McGregor, 2000). During each observation period, each participating child wore a nametag with a numeric code on it. At the end of each 15 seconds, the researcher recorded the target child's play behaviors by circling one of the codes representing solitary play (S), onlooker (O), parallel play (P), or associative play/cooperative play (AC). If a child engaged in two different play behaviors (e.g., parallel play and associative/cooperative play) during a 15-second interval, the higher level of play behavior was recorded (e.g., associative/cooperative play > parallel play> onlooker> solitary play).

Next, if the target child with a disability had engaged in associative/cooperative play with a peer or parallel play, the researcher recorded the numeric code representing the peer. If the target child engaged in play with more than one peer, the numeric codes representing all play partners were recorded. However, if a target child demonstrated a challenging behavior (e.g., hitting, pushing, throwing a toy at a peer) during an interval, the interval was marked as "N" (negative behavior) and other play behaviors or teacher behaviors were not recorded. Also, when a target child talked with a teacher and did not engage in any play, then only teacher involvement was coded for that interval. The definitions for each play behavior (e.g., Parten, 1932; Pierce-Jordan & Lifter, 2005) are provided in Table 6 and a sample observation form appears in Appendix F.

In addition to recording the target child's play behaviors, adults who were involved in the play area were noted. Thus, if a classroom teacher or other adults such as therapists, social workers, or volunteers were engaged in play, facilitated play with children, or had a conversation with children, their involvement in play also was coded. After each 10-minute observation session, the researcher noted the play context on the observation form (i.e., In what play areas did the target child spend most of his/her time? Who was the target child's main play partner?).

Procedures

Play observations. Once parents returned consent forms, observations were conducted during regularly scheduled free-play sessions (e.g., free choice time, center time) in each classroom. Free play is an appropriate situation to observe children's interactions for this context provides many opportunities for social interactions, as children typically choose which classmates they want to be near and with whom they want to play. Also, children typically can change activities or locations at will. The free play settings were similar in the three classrooms. All three classrooms included the following play areas: puzzle and fine motor materials, cars and trucks, blocks, housekeeping and dramatic play, science area, sensory table, and carpet area. Also, each of the classrooms had two computers for children to use. Children were allowed to play in any play area and each free play period lasted between 40 to 50 minutes each day. Within each class, for the computers and sensory tables, only two children could play in these locations at a time whereas all other centers were available to an unlimited number of children. In addition, during free play time in the three classrooms, the teachers sometimes worked with a specific child on an art project or an assessment. Thus, the researcher did not gather observational data when the teacher worked individually with a target child or when the target child played on a computer alone. However, the researcher did gather observational data when a target child played computer games with peer(s).

Observation sessions originally were scheduled across the 9 target children with disabilities within the 3 classrooms but due to one child's excessive absenteeism, only 8 target children with disabilities completed this study. Ten-minute observations were conducted on each target child with a disability with no more than 3 observations occurring each week. During all

observations, the researcher positioned herself where the target child was clearly seen but so as not to intrude on peer interactions.

Inter-observer reliability. To ensure the accuracy of the researcher's recordings, a doctoral student majoring in Special Education served as the second observer. The two observers practiced observing and recording the selected play behaviors by observing children playing together during free play settings in two different preschool classrooms that was not part of this study. Training continued until inter-observer agreement equaled at least 80% on all variables for three consecutive observations. This criterion for terminating training is one frequently used in studies that include behavioral observations (Hall & McGregor, 2000; Odom & Ogawa, 1992). The primary observer wore a MP 3 device and an earphone with prerecorded signals to indicate the beginning of each 15-second interval. The second observer also wore an earphone connected to the same MP 3 device as the primary observer, so both observers could hear the signal for each 15-second interval.

The second observer participated in 20% of the observation sessions for each target child for the purpose of conducting reliability. Those 20 % of reliability sessions were randomly assigned to each of the 8 target children and 6 typically developing children. Inter-observer agreement was calculated on an interval-by-interval basis using the following formula: the number of agreements divided by the number of agreements plus the number of disagreements, multiplied by 100. Mean percentage of inter-observer agreement and range by categories of child behaviors appear in Table 7.

Sociometric peer ratings, Social Acceptance ratings, and child interviews. Sociometric peer ratings, *Social Acceptance Ratings,* and child interviews were administrated individually to all participating children. The researcher conducted all three measures. Each of

the three measures was conducted on a different date in the following order: sociometrics, *Social Acceptance Ratings*, and the child interview. Each measure took less than 10 minutes per child. Children's responses were audio-recorded during all child interviews. All three measures were administered within a 4-week time period in each of the 3 classrooms.

Before conducting each assessment, children were asked if they would like to go with the researcher. A child who agreed to participate in the assessment was then taken to a desk in the hallway. As the researcher and child walked to the testing site, the researcher tried to establish rapport with the child by chatting about something the child was wearing or what she/he was doing in the classroom. Then, the researcher sat next to the child and administered the target assessment.

Children with disabilities also participated in the assessments following the same procedures described above. However, if a child with a disability did not respond to the questions during an assessment or if he/she had difficulty focusing on the task, the assessment was discontinued and a second attempt was made another day. If the second attempt was not successful, the assessment was discontinued and a third attempt was made another day. If the third attempt was not successful, the researcher noted that the assessment was not successful.

Data Analysis

To ensure participants' confidentiality, each child was given a numeric code. This code was used when all data were entered into an SPSS spreadsheet on the computer. Observational data were analyzed by target child as the average percentage of intervals for each play behavior. For observations of each target child with a disability, the intervals that the target child engaged in associative/cooperative play were considered a peer play interaction. To analyze which peers played with target children with disabilities and how much time they played together, the

percentage of intervals that a child engaged in associative/cooperative play with a target child with a disability was counted. In addition, the percentage of intervals that a child engaged in parallel play near a target child with a disability also was counted. Finally, the percentage of intervals that a teacher or another adult (e.g., therapist, social worker, or volunteer) was involved in children's play (i.e., solitary play, onlooker, parallel play, or associative/cooperative play) was calculated.

In addition, data from observation sessions of typically developing children were used to compare the percentages of each target play behavior between children with and without disabilities. Thus, the average percentage of intervals that typically developing children engaged in each play behavior was calculated. Descriptive analysis and ANOVA tests were used to examine differences in play behaviors between children with and without disabilities.

Sociometric peer ratings. To examine the social acceptance status of children with disabilities, mean sociometric scores that each child with a disability received from all other classmates were calculated. To analyze the relationship between children's reported preferences to play with a classmate with a disability and their percentage of play behaviors with the classmate with a disability, dyadic analyses (Kenny, Kash, & Cook, 2006) were used. Each participating child was paired with a classmate with a disability in a dyad, with each dyad considered a unit (therefore to analyze the relationship). Each dyad was labeled as "2" (*like to play with a lot*), "1" (*like to play with a little*), or "0" (*do not like to play with at all*) based on a typically developing child's sociometric rating of each target child with a disability. The average percentage of intervals that two children in a dyad engaged in associative/cooperative play or parallel play was calculated (see Appendix G for an example of a dyadic analysis). Then, a one-way analysis of variance (ANOVA) was applied to analyze the relationship between children's

stated preferences to play with classmates with disabilities and their actual play behaviors with classmates with disabilities.

Social Acceptance ratings. For the *Social Acceptance Ratings*, children received a score from 1 to 4 on each of the three items on the scale. Each child's average score was calculated. A higher score represented a higher level of acceptance. The mean percentage of intervals that a child was engaged in associative/cooperative play or parallel play with each of the 8 target child with a disability was calculated. The relationship between each child's scores on the *Social Acceptance Ratings* and his/her actual play behaviors with classmates with disabilities were analyzed using a linear Regression.

Child interviews. To analyze children's identification of disabilities, the percentage of children who recognized each classmate with a disability was calculated. In order to analyze the relationship between children's identification of a classmate as having a disability and their actual play behaviors with the classmate, each child was paired with a classmate with a disability and the average percentage of intervals that these two children engaged in associative/cooperative play or parallel play was calculated (see Appendix G for an example of a dyadic analysis). Then, a one-way ANOVA was conducted to examine if there was a relationship between a child's identification of a classmate as having a disability and his/her play behaviors with the classmate with a disability.

Children's responses to three interview questions (e.g., "Why do you think this child cannot walk so well?" "Why do you think this child cannot talk so well?" "Why do you think this child does not behave the way the other children do?") were audio-recorded and then transcribed by the researcher. The responses were read and reread several times to determine themes, following content analysis procedures described by Johnson and LaMontagne (1993).

Children's answers were bracketed and categorized according to major themes by the researcher and one of her advisors. Mutually exclusive categories were developed and then definitions were developed for each category. To strengthen category integrity, the researcher and one of her advisors sorted all responses, compared categories, and then discussed the categories to reach consensus.

Inter-rater agreement was calculated on the sorting, using an exact agreement method. A graduate student majoring in Special Education sorted 20% of the responses that were randomly selected from each category. Reliability was calculated using the following formula: the number of agreements divided by agreements plus disagreements and multiplied by 100. Mean percentage of inter-rater agreement averaged 95.2% for combined responses to the first and second interview question (ability to walk or talk), and 83.3% for responses to the third interview question (ability to behave well). Data sources, types of analyses, and research questions are shown in Table 8.

Chapter 4

Results

The findings of this study indicate that the majority of typically developing children identified at least one classmate with an IEP as "having a disability"[1] but rarely identified *all* classmates with IEPs as "having a disability." Typically developing children were less likely to play with classmates with disabilities whom they "identified as having a disability" compared to peers who they did not identified as "having a disability." In addition, typically developing children were more likely to play with classmates with disabilities if they rated them on the sociometrics as someone who they "liked to play with" versus "did not like to play with." Closer inspection revealed that children's sociometric peer ratings were a stronger indicator of whether a typically developing child would play with a classmate with a disability than was identification of a classmate as having a disability. Thus, typically developing children were more likely to play with a classmate with a disability if they rated him/her on the sociometrics as someone who they "liked to play with" regardless of whether they identified the classmate as having a disability.

However, children's acceptance of a hypothetical peer with a disability was not related to any of the variables (e.g., identification of a classmate as having a disability, stated preference to play with a classmate with a disability, actual play behaviors with a classmate with a disability). Notable differences were observed in the overall play behaviors of children with and without disabilities. Not surprisingly, a sample of six typically developing children spent more time in associative/cooperative play than did the eight target children with disabilities. Adults (e.g., classroom teachers, teaching assistants, personal assistant) were more often involved in the play

[1] Throughout this paper, "children's identification of a classmate as having a disability" refers to children's identification of a classmate as having difficulty walking or talking in response to the two interview questions (e.g., "Who does not walk or run the way the other children do?", "Who does not talk as well as the other children?").

of children with disabilities. A detailed discussion of the findings in relation to each research question follows.

Young Children's Ability to Identify a Classmate as Having a Disability

As noted, the majority of typically developing children (n = 29/32) identified at least one classmate with an IEP as having a disability, when asked to point to photographs of classmates who *did not walk or talk* as well as the other children. Many typically developing children (65.6%, n = 21/32) identified 2 or 3 classmates with IEPs as having a disability while one-fourth of the children (n = 8/32) identified only one classmate with an IEP as having a disability. There were 3 children who did not identify any of their classmates with IEPs as having a disability and only one child identified all 4 classmates with disabilities or developmental delays.

In contrast, the third interview question (about who *had difficulty behaving well*) was not useful for discriminating between classmates with and without disabilities. Only one-third of the typically developing children (34.4%, n = 11/32) identified a classmate with an IEP as having difficulty behaving well. Many typically developing children identified either typically developing classmates or a mix of classmates with and without IEPs as having difficulty behaving well. The number and percentage of children identified for each interview question are presented in Table 9. Child responses in Table 9 are divided into 4 categories: children who identified only classmates with disabilities, children who identified only typically developing classmates, children who identified both classmates with and without disabilities, and children who did not respond to the question. In addition, the percentage of typically developing children who identified each classmate with an IEP in response to each interview question is presented in Table 10.

Children's identification of a classmate who "did not walk or talk as well as the other children" varied according to the types of disabilities of their classmates. Typically developing children were more likely to identify classmates with more obvious disabilities (e.g., Down syndrome, autism, cerebral palsy, or health impairment) than they were to identify children with developmental delays. Interestingly, a child who was typically developing but never spoke in school due to selective mutism was identified as having difficulty talking by the majority of her classmates while a child who wore a hearing aid but communicated well with others was not identified by any of her classmate as walking, talking, or behaving differently than her classmates. Frequency and percentage data on children's identification of classmates with an IEP as having a disability are presented in Table 11. To identify the severity of disability for the children with IEPs, the two classroom teachers completed the *ABILITIES Index* (Simeonsson & Bailey, 1991) for each of their students with IEPs. Higher scores represented more severe disabilities. Scores that each child with an IEP received on the *ABILITIES Index* from their teachers also are included in Table 11.

A one-way ANOVA revealed significant differences across classrooms in children's identification of a classmate as having a disability, $F\ (2, 29) = 30.120$, $p < .001$. A post hoc Tukey, to determine which means were significantly different from one another, indicated that typically developing children in Class C (which included a child with cerebral palsy in a wheelchair and a child with autism) were more likely to identify classmates with IEPs as having a disability than children in Class A and Class B.

When children pointed to a photograph of a classmate in response to one of the three interview questions, the researcher asked for an explanation (e.g., "Why do you think this child does walk or run the way the other children do?", "Why do you think this child does not talk as

well as the other children?", "Why do you think this child does not behave the way the other children do?"). A total of 92 responses were gathered from the 32 typically developing children. However, 17 comments were not related to the questions or the children simply mentioned, "he/she can't" without further explanation. Thus, those comments were not included in the analysis and a total of 75 comments were analyzed: 14 comments for the first interview question (difficulty walking), 20 comments for the second interview question (difficulty talking), and 41 comments for the third interview question (difficulty behaving well).

As is evident in Table 9, the majority of typically developing children pointed to the photographs of classmates with IEPs in response to the first (difficulty walking) and second interview questions (difficulty talking). However, in response to the third interview question (difficulty behaving well), many children identified a mix of classmates with and without disabilities and almost all children described *"behavioral issues"* of their classmates. Thus, children's comments to the first and second research question were combined for analysis.

Using content analysis, 8 categories were created for the 34 responses to the first and second interview questions (difficulty walking or talking). The most frequently mentioned comments fell into the categories of *has difficulty, is immature,* and *has limited function*. Additional information about the categories and examples of children's responses are presented in Table 12.

The majority of the 41 comments to the third interview question included a focus on challenging behaviors or children's social skills. Content analysis procedures resulted in 4 categories: *doesn't follow rules*, *has inappropriate social skills*, *engages in aggression,* and *shows behavior related to the disability*. Categories and examples of children's responses about classmates' behaviors are presented in Table 13.

In summary, the majority of typically developing children identified at least one classmate with an IEP in response to the first two interview questions about peers' ability to walk or talk. Children with developmental delays were least likely to be identified as having a disability whereas children with physical disabilities, Down syndrome, or autism were most likely to be identified. Children did not discriminate between classmates with and without disabilities when asked to identify peers who "had difficulty behaving well." Content analysis showed that children use a variety of reasons to explain their classmates' differences in walking, talking, or behaving.

The Relationship between Preschoolers' Identification of a Classmate as Having a Disability and their Play Behaviors with the Classmate

To examine the relationship between children's identification of a classmate as having a disability and their actual play behaviors with the classmate, data from the 32 typically developing children's responses to the interviews questions and their play behaviors during free play sessions were analyzed. Analysis was conducted by using dyadic analysis procedures in which each typically developing child was paired with a target child with a disability (see Appendix G for an example of dyadic analysis). Across the three classrooms, a total of 84 dyads were identified: 24 dyads in Class A (12 typically developing children and 2 target children with disabilities), 30 dyads in Class B (10 typically developing children and 3 target children with disabilities), and 30 dyads in Class C (10 typically developing children and 3 target children with disabilities). Each dyad was labeled as "0" (*non-identification of disability*) or "1" (*identification of disability*) based on a typically developing child's responses to the first or second interview questions (ability to walk or talk). Therefore, if the typically developing children selected the target child for either question, then they received a score of "1." Children's responses to the

third interview question (ability to behave well) were not used because the question was not helpful in discriminating between classmates with and without disabilities. Of the 84 dyads across the three classrooms, 36 dyads were labeled as "0" (non-identification of a disability) and 48 dyads were labeled as "1" (identification of a disability).

To calculate the percentage of intervals that a typically developing child played with a target child with a disability, the researcher added the number of intervals in which a target child with a disability engaged in associative/cooperative play with the dyadic partner across all observation sessions. In a separate analysis, the percentage of intervals that a typically developing child engaged in parallel play near a target child with a disability also was calculated. The dyadic analysis showed that 85% of the dyads (n = 72/84) engaged in associative/cooperative play during at least one interval over the course of this study. The average percentage of associative/cooperative play for each of these 72 dyads was low, ranging from .10% to 13.41% of intervals (M = 2.15%, SD = 2.55). The percentage of associative/cooperative play for each of the 84 dyads is presented in Appendix H.

An ANOVA test revealed that children's identification of a classmate as having a disability was negatively related to their percentage of *associative/cooperative play* with the classmate with a disability, $F(1, 82) = 4.328$, $p < .05$. In other words, children who did not appear to notice that a classmate had a disability spent more time in associative/cooperative play with the classmate than children who identified that classmate as having a disability. However, there was no relationship between children's identification of a classmate as having a disability and their parallel play near the classmate with a disability. Additional ANOVA data are presented in Table 14.

The Relationship between Preschoolers' Sociometric Ratings of a Classmate with a Disability and their Play Behaviors with the Classmate

Across the three classrooms, 40 children completed sociometric ratings on classmates: four children with disabilities were unable to participate in the task as they did not appear to understand the directions. Mean sociometric scores that each child received from all other peers in his/her classroom were calculated. Then, children's mean sociometric scores in each classroom were averaged as a class mean. All of these average class scores were very close to, or at 1.0, representing "*like to play with a little.*" Similarly, results showed that 5 of 9 target children with disabilities were above, or proximal to, their class mean sociometric scores. The remaining 4 children with disabilities received sociometric scores that were lower than the class mean scores.

To analyze the relationship between children's stated preferences to play with a classmate with a disability and their actual play behaviors with the classmate with a disability, data on the 32 typically developing children and 8 target children with disabilities were used in a dyadic analysis. Each dyad was labeled as "2" (*like to play with a lot*), "1" (*like to play with a little*), or "0" (*do not like to play with at all*) based on the typically developing child's sociometric rating of the target child with a disability. A total of 84 dyads were identified: 44 dyads were labeled as "0" for the typically developing child reported that he/she "*did not like to play"* with the classmate with a disability, 10 dyads were labeled as "1" for the typically developing child reported that he/she "*liked to play a little"* with the classmate with a disability, and 30 dyads were labeled as "2" for the typically developing child reported that he/she "*liked to play a lot"* with the classmate with a disability. The average percentage of intervals that the two children in a dyad engaged in associative/cooperative play or parallel play also was analyzed.

Given the fact that most of the dyads were labeled "0" (*do not like to play,* n = 44/84) or "2" (*like to play a lot*, n = 30/84) and the class mean sociometric score was "1" (*like to play a little*), the categories of "*like to play with a little"* (1) and "*like to play with a lot"* (2) were combined to contrast the negative ratings and positive ratings. An ANOVA indicated a significant relationship between children's stated preference to play with a classmate with a disability and their actual play behaviors with the classmate with a disability, $F(1, 82) = 5.777$, $p < .02$. Typically developing children who reported that they *liked to play (a little or a lot)* with a classmate with a disability spent more time in *associative/cooperative play* with that classmate with a disability than children who reported that they *did not like to play* with that classmate with a disability. There was no significant relationship between children's sociometric ratings of classmates with disabilities and their *parallel play* near those classmates with disabilities. Additional ANOVA data are presented in Table 15.

An ANOVA was used to examine the interaction effects of children's sociometric ratings of a classmate with a disability × identification of the classmate as having a disability, on their percentages of associative/cooperative play with the classmate with disability as the dependant variable. The ANOVA revealed significant interaction effects among these three variables, $F(3, 80) = 3.555$, $p < .02$. A post hoc test indicated that typically developing children were *most* likely to play with a classmate with a disability who they "*liked to play with"* and "*did not identify"* as having a disability while they were *least* likely to play with a classmate with a disability who they "*did not like to play with"* and "*identified"* as having a disability. Results also suggested that children's sociometric ratings were a stronger indicator of whether children played or did not play with a classmate with a disability than their identification of a classmate as having a disability. For example, typically developing children spent more time in associative/cooperative

play with classmates with disabilities whom they "liked to play with" versus children who they "did not like to play with" regardless of whether they identified the classmate as having a disability or not. Also, if typically developing children rated a classmate with a disability as someone they "did not like to play with," they rarely spent time playing with the classmate regardless of whether they identified or did not identify the classmate as having a disability. Additional ANOVA data for the interaction effects are presented in Table 16.

The Relationship between Preschoolers' Social Acceptance of a Hypothetical Peer with a Disability and their Play Behaviors with Classmates with Disabilities

Children's responses on the *Social Acceptance Scale* (Diamond, 1994, 2001) showed that the 32 typically developing children were generally accepting of hypothetical peers with disabilities (M = 2.7, SD = .89). To analyze the relationship between children's social acceptance of hypothetical peers with disabilities and their actual play behaviors with classmates with disabilities, each typically developing child's average score on the *Social Acceptance Scale* was calculated. Also, the mean percentage of intervals that each typically developing child engaged in associative/cooperative play or parallel play with target children with disabilities was calculated. Using a linear regression, the 32 typically developing children's data were analyzed. Results showed no relationship between children's social acceptance of hypothetical peers with disabilities and their percentages of *associative/cooperative play* or *parallel play* with classmates with disabilities, β=.286, t=.910, p >.10. The regression analysis also revealed no relationship between children's acceptance of hypothetical peers with disabilities and their gender or age.

In addition, a Pearson correlation was conducted to examine the relationship between children's identification of disabilities, sociometric ratings, and social acceptance of hypothetical peers with disabilities. Results showed no relationship among these three variables. Children's

identification of a classmate as having a disability did not predict their stated preference to play with the classmates with a disability on the sociometrics. Neither children's identification of a classmate as having a disability nor their stated preference to play with classmates with disabilities were related to children's social acceptance of hypothetical peers with disabilities.

Comparison of Play Behaviors of Children with and without Disabilities

To compare the play behaviors of children with and without disabilities, data on the 8 target children with disabilities and 6 typically developing children across the 3 classrooms were analyzed using an ANOVA test. Results indicated several significant differences in play behaviors and teachers' involvement in play between children with and without disabilities. The 8 target children with disabilities were more likely to engage in solitary play, F (1, 12) = 17.137, $p < .001$, and onlooker behaviors, F (1, 12) = 12.008, $p < .01$ than the 6 typically developing children. Not surprisingly, the 6 typically developing children spent more time in associative/cooperative play, F (1, 12) = 12.486, $p < .01$ than the 8 children with disabilities. However, there were no differences in parallel play between the two groups of children.

The ANOVA test also revealed that adults (e.g., classroom teachers, teaching assistants, personal assistant) were more often involved in the solitary play of children with disabilities, F (1, 12) = 10.875, $p < .01$. Also, teachers' involvement in children's onlooker, parallel play, and associative/cooperative play did not differ between the two groups of children. Additional information about children's play behaviors and teachers' involvement is presented in Table 17.

In addition to group differences, the play behaviors varied across target children with disabilities. Compared to the other target children with disabilities, the child with the corrected hearing impairment spent more time in associative/cooperative play and less time in solitary play. Also, the children with a health impairment, Down syndrome, and autism spent less time in

associative/cooperative play and more time in solitary play than the other 5 target children with disabilities. The child with a health impairment was most likely to spend time with her teachers (including her personal assistant) in solitary play than the other 7 target children with disabilities. Additional information about the play behaviors of each target child with a disability is presented in Table 18.

In summary, the results of this study show that children's identification of classmates as having a disability was negatively related to their associative/cooperative play with the classmates while children's sociometric ratings of classmates with disabilities were positively related to their associative/cooperative play with classmates with disabilities. Therefore, children's sociometric peer ratings were a stronger indicator of whether a typically developing child would play with a classmate with a disability than was their identification of a classmate as having a disability. However, children's social acceptance of a hypothetical peer with a disability was not related to their identification of a classmate as having a disability, stated preference to play with a classmate with a disability, or actual play behaviors with classmates with disabilities.

Chapter 5

Discussion

This study was conducted to examine relationships between preschoolers' attitudes and their play behavior toward classmates with disabilities. The focus was to examine relationships between the three components of attitude formation suggested by Triandis (1971): cognitive, affective, and behavioral components. The findings indicate that one cognitive component (identification of a classmate as having a disability) was negatively related to the behavioral component (actual play behaviors with classmates with disabilities) while the affective component (stated preference to play with classmates with disabilities) was positively related to the behavioral component. In addition, the affective component was more strongly related to the behavioral component than the cognitive component. However, another cognitive component, children's social acceptance of a hypothetical peer with a disability was not related to any of the attitude components.

One of the main findings in this study is that typically developing children were more likely to play with classmates with disabilities who they "did not identify as having a disability" compared to peers who they identified as "having a disability." A possible explanation for this relationship may be that the interview questions to assess children's identification of a classmate as having a disability focused on deficits (e.g., a child "does not walk or talk as well as the other children"). Also, many children's responses to the questions about *why* the identified classmates could not walk or talk like other children reflected functional limitations such as "*has difficulty"* or "*is immature*." Therefore, children's perceptions about classmates who they identified as having disabilities or differences might have affected their play behaviors with the identified classmates. Children might see those classmates with disabilities as less competent and, therefore

as less preferred playmates. Indeed, numerous research studies have shown that preschoolers in inclusive classrooms are more likely to choose a typically developing peer rather than a peer with a disability as a play partner (Brown, Odom, Li, & Zercher, 1999; Diamond et al., 1992; Guralnick, Connor, Hammond, Gottman, & Kinnish, 1995; Odom et al., 2006). Diamond and Huang (2005) pointed out that differences in children's peer interactions might depend on a child's disability (i.e., difficulties interacting with others) as well as on typically developing children's attitudes toward classmates with disabilities.

To date, researchers have suggested that both cognition and behavior are critically important, and influential in attitude development toward others (Diamond, 2001; Eagly & Chaiken, 1993). However, there has been very little research showing how cognition and behavior interact to influence the development of children's attitudes toward peers with disabilities. Understanding young children's ideas about what it means to have a disability and their decisions to include or exclude a peer with a disability in activities is critical in understanding the social environment within inclusive classrooms (Diamond et al., 2008).

Another main finding of this study indicates that typically developing children were more likely to play with classmates with disabilities if they rated them on the sociometrics as someone whom they "liked to play with" versus "did not like to play with." This finding contradicts a previous study in which Hestenes and Carroll (2000) reported that 29 preschoolers' playmate preferences using the sociometric peer ratings were not related to children's social play in the classroom and on the playground. One possible reason for this conflicting finding is that one of the two classrooms observed by Hestenes and Carroll included children with disabilities only during free play and not throughout the class day. However, the current study was conducted in inclusive preschool classrooms. In other words, the daily separations between the two groups of

children (children with and without disabilities) in one of Hestenes and Carroll's classrooms could have affected typically developing children's perceptions of peers with disabilities as not members of their classroom community.

Another possible explanation for the conflicting finding is that different approaches were used to analyze the sociometric ratings and play observations. Hestenes and Carroll (2000) averaged each typically developing child's sociometric ratings on all classmates with disabilities. They also used a classroom mapping system to record children's play behaviors. For the current study dyadic analysis was used and each typically developing child was paired with a target child with a disability in a dyad. Each dyad was labeled according to the typically developing child's rating of the dyadic partner on the sociometrics. Also, observations in the current study focused on a target child with a disability rather than scanning the classroom. This observation method allowed for the calculation of a percentage of intervals spent in associative/cooperative play for each dyad. Thus, the dyadic analysis used in the current study allowed for a more accurate examination of the relationship between individual children's stated preference to play with a target child with a disability and their engagement in associative/cooperative play with the dyadic partner with a disability.

Interestingly, the current study indicates that children's sociometric peer ratings were a stronger indicator of whether a typically developing child would play with a classmate with a disability than was their identification of the classmate as having a disability. In other words, typically developing children were more likely to play with a classmate with a disability if they rated him/her positively on the sociometrics regardless of their identification of the classmate as having a disability.

To date, many research studies have suggested that young children with disabilities often experience difficulties developing friendships and that they have limited social interactions with peers (e.g., Brown, Odom, McConnell, & Rathel, 2008; Buysee, Goldman, & Skinner, 2002; Guralnick, Hammond, Connor, & Neville, 2006). As a result, young children with disabilities are less accepted and often rejected by their typically developing peers (e.g., Geisthardt, Brotherson, & Cook, 2002; Odom et al., 2006). However, this does not mean that friendships do not exist for young children with disabilities (Freeman & Kasari, 1998). Some researchers have reported that many young children with disabilities have at least one playmate or close friend (Buysee, 1993; Guralnick, 1997; Yu, Ostrosky, & Fowler, 2011). The current study supports the belief that friendships exist between children with and without disabilities.

In fact, the current study shows that several target children with disabilities (e.g., children with a corrected hearing impairment, cerebral palsy or developmental delays) spent much time in associative/cooperative play with typically developing peers throughout all observation sessions (see Appendix H for a list of the play partners who often played with target children with disabilities). Most of the typically developing play partners (who spent much time playing with target children with disabilities) also rated the children with disabilities as someone who they "liked to play with (a little or a lot)." These data show that some target children with disabilities frequently played with their typically developing peers and therefore one could assume that the children were friends.

However, this study shows that children's social acceptance of hypothetical peers with disabilities was not related to any of the variables: identification of a classmate as having a disability, stated preference to play with classmates, and their actual play behaviors with classmates. While these results are consistent with Hestenes and Carroll's (2000) findings that

children's understanding of hypothetical peers' differing abilities is not related to their actual social play with classmates with disabilities, they contradict two previous studies (Diamond, 2001; Okagaki et al., 1998). Okagaki and colleagues suggested that children who reported a willingness to play with hypothetical peers with disabilities were more likely to interact with classmates with disabilities. Diamond also demonstrated that children who had social contact with classmates with disabilities were more accepting of hypothetical peers with disabilities.

A possible explanation for the contradictory results may be due to the fact that different methodologies were used across studies. Okagaki et al. (1998) merged parallel and social play as an observational category while those two play behaviors were coded separately in the current study. Diamond (2001) defined social contact as verbal or physical exchanges, or sustained visual regard while the current study defined associative/cooperative play as social play between two children. Additionally, the three research teams (Diamond; Hestenes & Carroll; Okagaki et al., 1998) used a classroom scanning system to gather observational data. Although this scanning technique identifies all play partners within an area of the classroom, it does not focus on sustained peer interactions between children with and without disabilities. In the current study, the researcher observed one target child with a disability during each observation session and recorded all play partners of the target child during a 10-minute time period. Additional research is needed to examine the comparability of these different observation systems in sampling peer interactions between children with and without disabilities.

To date, young children's attitudes toward peers with disabilities have been assessed in several ways (e.g., acceptance of peers with disabilities, understanding of disabilities, stated preference to play with peers with disabilities, and ability to identify disabilities in peers). However, research is limited in assessing children's identification of a peer's disability (Conant

& Budoff, 1983; Diamond, 1993). The current study extends this line of research in several important ways. The results of this study show that the majority of typically developing children identified at least one classmate with an IEP as having a disability but rarely identified all classmates with IEPs. Many children tended to identify classmates with more obvious disabilities (i.e., Down syndrome, autism, cerebral palsy) compared to classmates with developmental delays. These results are consistent with Diamond's early research findings, which suggested that preschoolers identified classmates with physical disabilities and Down syndrome as having a disability but rarely identified children with speech delays (Diamond, 1993). Conant and Budoff (1983) also suggested that preschoolers were aware of sensory disabilities (including physical disability) but had difficulty understanding intellectual disabilities, when they were asked if they knew anyone with a disability. These findings demonstrate that many preschool children are able to recognize their peers' more obvious disabilities and that the cognitive aspect of attitudes toward peers with disabilities is beginning to develop during the preschool years. Interactions and observations during the school day can impact young children's identification of their classmates' disabilities and consequently the development of positive or negative attitudes toward peers.

Children's explanations about *why* an identified classmate could "not walk or talk" like the other children provided a window into the ways in which young children organize and structure knowledge about their peers with disabilities. Although not all of the children's responses accurately explained their classmates' differences or disabilities, children's responses reflected their attempts to assimilate a peer's difference (disability) into their already existing cognitive structures (e.g., "She has something wrong with her body," "She is a baby," "He doesn't want to talk"). Some children accurately reported what they observed about their

classmates with disabilities (e.g., “He does not walk. He can only crawl,” “ He doesn’t talk and he went down to the other classroom,” “He can’t walk because of this wheelchair”). Most of the children also accurately described classmates’ behavioral problems (e.g., not following rules, having inappropriate social skills, engaging in aggression). These data show that during the early childhood years, children begin to recognize their peers’ differing abilities and behaviors. These findings have implications for professional development as teachers should carefully consider their role in supporting positive attitudes toward peers with a range of abilities.

Limitations and Suggestions for Future Research

Several limitations must be considered when evaluating the findings from the current study. Most of all, the findings are limited because of the small sample of children who were drawn from only three classes. For example, although there was a statistically significant relationship between children’s identification of a classmate as having a disability and the percentage of intervals they spent in associative/cooperative play with the classmate, the mean percentage of associative/cooperative play for each dyad was very low (2.85% for dyads in which a typically developing children did not identify a classmate as having a disability and 1.69% for dyads in which a classmate was identified as having a disability). Therefore, recruiting a larger sample from multiple settings would increase the generalizability of this study as well as allow for an in-depth examination of the relationship between children’s attitudes and play behaviors toward peers with disabilities.

Another limitation of this study has to do with the measures used to assess young children’s attitudes toward peers with disabilities. An important area of attitude research is measuring young children’s acceptance of peers with disabilities. Researchers have used a variety of methods such as scales, questionnaires, interviews, sociometric peer ratings, and

behavioral observations to assess children's attitudes. However, many of these methods have only been used with older children; there is limited research focused on measuring young children's attitudes toward peers with disabilities (Favazza & Odom, 1996). This limitation stems from the methodological challenges that researchers face when assessing young children's attitudes (Stoneman, 1993) due to their limited ability to explain their thoughts and feelings.

In fact, the three interview questions used in the current study focused on three areas: difficulty walking/running, talking, and behaving well. Thus, children's identification of a classmate as "having a disability" was limited to those three areas; it was not the purpose of this study to evaluate children's accurate identification of a disability. For example, several children pointed to the photographs of their classmates with Down syndrome, autism, or health impairment in response to the first interview question ("Who does not walk or run the way the other children?"). These responses did not match the actual characteristics of the children with disabilities (i.e., the child in Classroom B who had Down syndrome exhibited no problems walking). However, these data show that young children can recognize certain differences or differing abilities in their peers. Therefore, researchers need to develop more effective methods (e.g., interview questions or scales) to assess what young children think about their peers' disabilities and how their ideas and thoughts affect their acceptance of and behaviors toward their peers with disabilities.

Additionally, in the current study the researcher conducted the *Social Acceptance scale* that was used by Diamond in several studies with preschool age children (e.g., Diamond 1994, 2001). However, the three items on the scale focused on children's perceptions of hypothetical peers with disabilities (i.e., "Do you think this child has lots of friends to play with or not very many friends to play with?") instead of directly asking children about their willingness to play

with, or accept the hypothetical peers with disabilities as friends (i.e., "Would you like to be a good friend with this child?" "Would you like to play with this child?"). In addition to the items on the scale, dolls representing a child in a wheelchair were used to help children understand the hypothetical peers with disabilities. Thus, this scale was limited to representing only a child with a physical disability and the three questions were limited to assessing children's perceptions of a hypothetical peer with a physical disability.

The third limitation of the current study was that environmental factors (i.e., personal experience with individuals with disabilities as well as parents/family and teachers' perceptions, and classrooms/school variables) were not examined to assess their influence on children's attitude development toward peers with disabilities. Given that the results of this study show that children's identification of a classmate with an IEP as having a disability is not related to their stated preference to play with the classmate, there may be many social and behavioral factors that influence children's preference to play with peers with disabilities.

An important topic in the area of attitude research is to identify factors that influence the attitude development of young children toward their peers with disabilities. Diamond and Huang (2005) stated that children's attitudes toward peers with disabilities are impacted by personal experience. Bricker (1995) also pointed out that positive attitudes toward peers with disabilities could be fostered and altered because children's attitudes about people and events are influenced by their primary caregivers. The attitudes of the significant adults in a child's life can greatly impact his/her attitudes toward peers with disabilities. More research is needed to better understand how children's personal experiences with individuals with disabilities support the development of positive attitudes toward peers with disabilities. Additionally, the relationship

between children's attitudes and parents' attitudes toward individuals with disabilities should be further explored.

Implications for Practice

There are a variety of implications that may be drawn from this study to promote young children's positive attitudes toward peers with disabilities as well as increase social interactions between children with and without disabilities. First, one of the main findings in this study was that children's identification of a classmate with an IEP as having a disability could negatively affect their social interactions with the classmate. This finding suggests that without planned activities or programs to help children understand and accept their classmates with disabilities, simply being present in the same setting does not necessarily result in positive attitudes toward peers with disabilities.

Participation in inclusive classrooms can provide many opportunities for young children to interact with peers with a range of abilities. Research has shown that typically developing children in inclusive preschool classrooms tend to have positive attitudes toward peers with disabilities (Diamond & Hestenes, 1996; Dyson, 2005; Okagaki et al., 1998; Tamm & Prellwitz, 2001). However, including children with disabilities in inclusive classrooms is unlikely to spontaneously enhance interactions between children with and without disabilities (e.g., Diamond & Tu, 2009). Inclusion alone is not sufficient to promote positive attitudes toward peers with disabilities. Thus, to support young children's positive attitudes toward peers with disabilities, interventions designed to promote young children's positive attitudes toward, and interactions with, peers with disabilities should be implemented.

For instance, Cooper (2003) implemented two different interventions to promote preschoolers' understanding of, and positive attitudes toward peers, with physical disabilities: (1)

having children use a wheelchair to get around the school and then discussing their experiences using a wheelchair with classmates, and (2) using children's books and videotapes to teach children about people with physical disabilities. Favazza and Odom (1997) also implemented an intervention package consisting of three components: indirect experiences (story time and class discussion about children with disabilities), direct experiences (structured cooperative play in a small group that included children with disabilities), and the child's primary social group (a home reading component using books about children with disabilities). Similarly, Piercy and her colleagues (2002) examined the effectiveness of cooperative-learning activities on young children's attitudes toward peers with disabilities. In each cooperative-learning session, typically developing children worked in small groups of 3 to 4 children, including one child with intellectual disabilities. Cooperative learning activities included cutting and pasting magazine pictures for group posters, drawing or painting group murals, and producing short plays or mimes. These three research studies revealed that typically developing children who participated in the intervention programs demonstrated significant increases in their acceptance of children with disabilities.

In addition to implementing intervention packages, teachers can use strategies in their natural classroom environments to promote children's positive attitudes toward, and interactions with, peers with disabilities. For example, in the course of a preschool day, teachers have multiple opportunities to determine the composition of small groups of children and can stimulate these groups to support positive interactions between children with and without disabilities. Teachers also manipulate classroom environments to provide children with exposure to various activities, model appropriate interactions, and facilitate peer interactions between children with and without disabilities (Guralnick, 2010; Hestenes & Carroll, 2000). Teachers

also share their values and attitudes with their students through the content and affective tone of their responses, as well as the information they share about individuals with disabilities (Diamond & Huang, 2005; Innes & Diamond, 1999). Teachers may want to help children make connections between what they think about a classmate's disability or differences and their playmate choice when they are attempting to interact with a peer with a disability (Hestenes & Carroll, 2000). If children do not understand why a peer with a disability is having difficulties during play, the teacher might model new strategies or problem solve with the children to promote successful interactions. Taken together these strategies may lead to the development of high quality early childhood inclusive environments that encourage positive attitudes and social interactions for all children.

Inclusion is an educational goal for all children. The outcomes of inclusion for children with and without disabilities should include a sense of belonging and membership, positive social relationships and friendships, and development and learning so all children reach their full potential (DEC/NAEYC, 2009). Therefore, it is the responsibility of educational professionals to make sure that our school environments are places in which all children feel accepted, regardless their differing abilities. For this goal to be achieved, understanding what young children think about their peers with disabilities and how their thoughts and ideas affect actual play interactions with their peers with disabilities is an important step in promoting social acceptance of, and interactions with, peers with disabilities. Results from the current study contribute to our understanding of children's thoughts about and behaviors toward their classmates with disabilities.

Tables

Table 1. Measures to Assess Young Children's Attitudes toward Peers with Disabilities

Research studies	Participants	Measurement type	Purpose of the measures	Cognitive/ Affective/ Behavioral aspect
Conant & Budoff (1983)	21 Preschoolers	Child interviews	Identification of disabilities	Cognitive
Diamond (1993)	28 Preschoolers	Child interviews	Identification of disabilities	Cognitive
Diamond (2001)	45 Preschoolers	*Social Acceptance Scales* Interviews: Helping Strategies & Emotion Situation Knowledge Observation of peer interactions	Acceptance ratings Measure of emotional sensitivities Play observation	Cognitive Affective Behavioral
Diamond & Hestenes (1994)	24 Preschoolers	Child interviews	Understanding of hearing, hearing loss, and sign language	Cognitive
Diamond & Hestenes (1996)	46 Preschoolers	Child interviews *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children*	Understanding and acceptance of hypothetical peers with disabilities	Cognitive
Diamond et al. (1997)	29 Preschoolers	Child interviews *Pictorial Scale of Perceived Competence and Social Acceptance for Young Children*	Understanding of immediate and long-term consequence of physical and sensory disabilities Acceptance of hypothetical peers with disabilities	Cognitive
Diamond et al. (1992)	25 Preschoolers	Sociometrics	Playmate preference of classmates	Affective
Diamond et al. (2008)	46 Preschoolers	Child Interviews	Understanding of disabilities and willingness to play with hypothetical peers with disabilities	Cognitive Affective

Table 1 (cont.)

Dyson (2005)	77 Kindergartners	An open-ended questionnaire, a revised version of *Primary Student Survey of Handicapped Persons*	Understanding and acceptance of hypothetical peers with disabilities	Cognitive Affective
Favazza & Odom (1996)	188 Kindergartners	*Acceptance Scale for Kindergartners-Revised (ASK-R)* *Child Interviews (Group)*	Acceptance of hypothetical peers with disabilities Understanding of individuals with disabilities	Cognitive Affective
Hestenes & Carroll (2000)	29 preschoolers	*Pictorial Scale of Perceived Competence andt Social Acceptance for Young Children* Sociometrics Direct observations	Understanding and acceptance of hypothetical peers with disabilities Playmate preference of classmates Play observations	Cognitive Affective Behavioral
Okagaki et al. (1998)	36 preschoolers (study #1) 38 preschoolers (study #2)	*Pictorial Scale of Perceived Competence and Social Acceptance for Young Children* *Social Problem Solving Test* *Parent questionnaire* Direct observations	Understanding and acceptance of hypothetical peers with disabilities Willingness to play with a hypothetical peer with a disability Parents' influence on children's attitudes or behaviors toward peers with disabilities Play observations	Cognitive Affective Behavioral
Piercy et al. (2002)	51 Kindergarteners to 2 graders	*Peer Acceptance Scale* *Social Distance Scale*	Acceptance of hypothetical peers with disabilities	Cognitive Affective

Table 2. Information about Participating Classrooms and Children

	Class A (n = 16)	Class B (n = 15)	Class C (n = 14)
AM or PM class	AM	AM	PM
Teachers	Teacher & TA Personal assistant	Teacher & TA	Teacher & TA
Total number of children	16	15	14
Gender			
Boy	8	7	8
Girl	8	8	6
Age (months)			
Mean	59.6	61	61
Range	51-68	53-68	51-68
Age (frequency)			
4 years olds	9	5	4
5 years olds	7	10	10

Note: Class B and Class C were taught by the same teachers. TA=Teaching Assistant

Table 3. Information for Target Children with Disabilities

Class	Child No.	Type of disability	*ABILITIES Index* Score	Gender	Age (Months)	Ethnicity
A	C1	Health impairment	26	Girl	67	Hispanic
	C2	Autism	19	Boy	58	Caucasian
	C3	Developmental delay	15	Boy	56	Caucasian
B	C4	Down syndrome	28	Boy	53	Caucasian
	C5	Hearing impairment	17	Girl	54	Caucasian
	C6	Developmental delay	15	Girl	58	Caucasian
C	C7	Cerebral Palsy	31	Boy	60	Caucasian
	C8	Autism	22	Boy	52	Caucasian
	C9	Developmental delay	17	Girl	51	Hispanic

Table 4. Items on the *Social Acceptance Ratings* (Diamond, 1994, 2001)

1. This boy/girl has lots of friends to play with. This boy/girl does not have very many friends to play with. If this doll (with a physical disability) were a real boy (or girl), do you think he (or she) would have a lot of friends to play with or not very many friends? (After the child chooses a drawing, he or she is asked another question.) Do you think this doll is "a lot like" or "a little bit like" the child in the drawing that you chose?
2. This boy/girl has lots of friends to play with on the playground. This boy/girl does not have very many friends to play with on the playground. If this doll (with a physical disability) were a real boy (or girl), do you think he (or she) would have a lot of friends to play with or not very many friends? (After the child chooses a drawing, he or she is asked another question.) Do you think this doll is "a lot like" or "a little bit like" the child in the drawing that you chose?
3. This boy/girl usually plays with the other kids. This boy/girl gets lonely sometimes because the other kids don't let him or her play with them. If this doll (with a physical disability) were a real boy (or girl), do you think he (or she) would play with the other kids or be lonely because the other kids don't let him or her play with them? (After the child chooses a drawing, he or she is asked another question.) Do you think this doll is "a lot like" or "a little bit like" the child in the drawing that you chose?

Table 5. Number of Observations for Children with and without Disabilities

Class A		Class B		Class C	
Child	Number of Observations	Child	Number of Observations	Child	Number of Observations
C1	20 (200 min)	C4	24 (240 min)	C7	20 (200 min)
C2	3 (30 min)	C5	21 (210 min)	C8	23 (230 min)
C3	21 (210 min)	C6	22 (220 min)	C9	17 (170 min)
T1	5 (50 min)	T3	8 (80 min)	T5	7 (70 min)
T2	5 (50 min)	T4	6 (60 min)	T6	7 (70 min)

Note: C=child with a disability, T=typically developing child

Table 6. Definitions of Play Behaviors

Play Behaviors	Operational Definitions
Solitary play (S)	Child sits, plays, or engages by him/herself in some type of activity; child gazes at the toys in front of him or her, or gazes away from the play area (e.g., around the room) without looking at or interacting with others; the child may separate from other children and play apart with chosen toys; the child does not look at what others are doing even if they are physically close.
Onlooker (O)	Child gazes at another person or at a person's actions; child's social status is that of observer, not participant; watches other children play but does not play or interact with them (e.g., child watches another child build a block tower).
Parallel play (P)	Child plays with the same materials in the same vicinity as peers but does not interact with peers; child plays with the same toys but does not interact verbally or nonverbally with peers (e.g., child plays with puzzles, or draws, side by side with peers without interacting with the peers).
Associative/ Cooperative play (AC)	Child's verbal and nonverbal behaviors are socially focused, including talking, sharing objects (e.g., gives an object to another child), or making physical contact (e.g., touches another child); includes playing in an organized manner, planning or having roles assigned, having a shared play theme (e.g., Children play together with plastic food at a house keeping area where they are cooking together with plastic food with one child pretending to be the chef while another is serving the food).
Teacher Involvement (T)	A classroom teacher or other adults such as therapists, social workers, or volunteers are engaged in the play or they facilitate play with children. Also, code if adult(s) are not engage in play with children but talk or respond to children within 3 feet.

Table 7. Inter-observer Agreement for Child's Play Behaviors

Play behaviors	Mean (%)	Range (%)
Solitary play	94.8	83.4 – 100
Onlooker	87.5	65 – 100
Parallel play	89.7	83.8 – 100
Associative/Cooperative Play	88.3	77.5 – 100

Table 8. Research Questions and Data Analyses used to Address Questions

Questions	Measures	Data analysis
1. To what extent do preschoolers identify disabilities in their classmates?	Interviews	The percentage of children who identify each classmate with an IEP as having a disability Content Analysis
2. Is there a relationship between children's identification of a classmate as having a disability and their play behaviors with the classmate?	Interviews Play observations	Descriptive analysis One-way ANOVA
3. Is there a relationship between children's sociometric ratings of classmates with disabilities and their play behaviors with the classmates with disabilities?	*Sociometrics* Play observations	Descriptive analysis One-way ANOVA
4. Is there a relationship between children's ratings of hypothetical peers with disabilities on a social acceptance scale and their play behaviors with classmates with disabilities?	*Acceptance scale* Play observations	Descriptive analysis Linear Regression
5. Is there a relationship between children's identification of a classmate as having a disability, sociometric ratings of classmates with disabilities, and their social acceptance of hypothetical peers with disabilities?	Interviews *Sociometrics* *Acceptance scale*	Descriptive analysis Correlation

Table 9. Frequency and Percentage of Children Identified for Each Questions

Child responses (n = 32)	Q1. Difficulty walking		Q2. Difficulty talking		Q3. Difficulty behaving well	
	N	%	N	%	N	%
Identified only CD	23	71.9%	24	75%	11	34.4%
Identified only TD	1	3.1%	0	0%	11	34.4%
Identified both CD & TD	1	3.1%	3	9.4%	7	21.9%
Not Respond	7	21.9%	5	15.6%	3	9.3%

Note: CD = classmates with disabilities, TD = typically developing classmates

Table 10. Children's Identification of a Classmate with an IEP for Each Interview Question

Class	Children with IEPs	Q1. Difficulty walking (%)	Q2. Difficulty talking (%)	Q3. Difficulty behaving well (%)
A (n = 12)	C1 with a health impairment	41.7%	41.7%	25%
	C2 with autism	16.7%	50%	0%
	C3 with a developmental delay	8.3%	25%	41.7%
	(Child with a developmental delay)*	0%	8.3%	0%
B (n = 10)	C4 with Down syndrome	50%	60%	30%
	C5 with a hearing impairment	0%	0%	0%
	C6 with a developmental delay	0%	0%	0%
	(Child with a developmental delay)*	0%	0%	0%
	(Child who was selectively mute)*	0%	80%	0%
C (n = 10)	C7 with cerebral palsy	80%	40%	0%
	C8 with autism	20%	90%	70%
	C9 with a developmental delay	20%	30%	50%
	(Child with a developmental delay)*	0%	0%	0%

Note: n = number of typically developing child participants in each class, C1 to C9 = target children with disabilities, * = children who were not selected as target children with disabilities for play observations

Table 11. Frequency and Percentage of Children's Identification of a Classmate with an IEP as Having a Disability

Class	Children with IEPs	N	%	*ABILITIES Index* score
A (n = 12)	C1 with a health impairment	7	58.3%	26
	C2 with autism	6	50%	19
	C3 with a developmental delay	3	25%	15
	(Child with a developmental delay)*	1	8.3%	12
B (n = 10)	C4 with Down syndrome	9	90%	28
	C5 with a hearing impairment	0	0%	17
	C6 with a developmental delay	0	0%	15
	(Child with a developmental delay)*	0	0%	11
	(Child who was selectively mute[a])*	8	80%	9
C (n = 10)	C7 with cerebral palsy	9	90%	31
	C8 with autism	9	90%	22
	C9 with a developmental delay	5	50%	17
	(Child with a developmental delay)*	0	0%	13

Note: C1 to C9 = target children with disabilities * = children who were not selected as target children with disabilities for play observations. [a] = this child was a typically developing child without an IEP. n = the number of typically developing children in each class.

Table 12. Categories and Examples of Children's Responses Regarding Classmates' Disabilities

Categories	Examples from children's responses	Number of comments (n = 34)
Has difficulty	"She has something wrong with her body." "He has trouble talking." "She does not know how to talk."	9
Is immature	"She is a baby." "Jake doesn't talk because he is so little."	7
Has limited function	"She can walk but she can't run." "You can hear Kyle because he answers questions but he is so quiet."	5
Doesn't want to talk	"That's why they don't want to talk." "Mary doesn't talk because she doesn't want to."	3
Needs teacher's help or special services	"He doesn't talk and he went down to the other classroom." "She wants to hold Ms. Harry's hands."	3
Is different	"He is different than us. His feelings are different."	2
Had an accident	"He got hurt in his knee so he can't walk." "His legs are broken."	2
Uses equipment	"He can't walk because of this (wheelchair)." "He got wheelchair."	2

Table 13. Categories and Examples of Children's Responses Regarding Classmates' Behaviors

Categories	Examples from children's responses	Number of comments (n = 41)
Doesn't follow rules	"These (children) don't listen." "He runs with no permission." "He puts toys where they are not supposed to be." "Brandon is screaming and Sarah talks a lot even though Mrs. Harry tries to stop her."	18
Has inappropriate social skills	"Joe is not nice." "He takes toys from somebody." "He doesn't share." "She is not being my friend."	13
Engages in aggression	"He throws toys at me and Matthew." "They broke toys." "He jumps on everybody." "He hits somebody and me."	9
Shows behavior related disability	"Mary (who has a seizure disorder) sometimes froze a little bit when we line up for the gym."	1

Table 14. ANOVA Results for Children's Identification of a Classmate as Having a Disability and Play Behaviors with the Classmate

Variables	M (%)	SD (%)	N (dyads)
Identification of Disability × *AC Play*			
Non-identification	2.80*	2.95	36
Identification	1.66	2.11	48
Total	2.15	2.55	84
Identification of Disability × *Parallel Play*			
Non-identification	2.20	1.98	36
Identification	2.64	2.82	48
Total	2.46	2.50	84

Note: AC play = Associative/Cooperative play, * = $p < .05$, M = Mean, SD = Standard Deviation

Table 15. ANOVA Results for Children's Sociometric Ratings of a Classmate with a Disability and Play Behaviors with the Classmate

Variables	Mean of AC play (%)	SD (%)	N (dyads)
Sociometric ratings			
Does not like to play	1.53	1.66	44
Likes to play (a little or a lot)	2.83*	3.14	40
Total	2.15	2.55	84

Note: AC play = Associative/Cooperative play, * = $p < .02$, SD = Standard Deviation

Table 16. ANOVA Results for the Interaction Effects

Variables	AC play (%)	SD (%)	N (dyads)
Likes to play (a little or a lot)			
Non-identification of disabilities	3.66[a]	3.39	19
Identification of disabilities	2.08	2.07	21
Total	2.83	3.14	40
Does not like to play			
Non-identification of disabilities	1.84	2.03	17
Identification of disabilities	1.33[a]	1.38	27
Total	1.53	1.66	44

Note: [a] = a post-hoc test indicated significant differences in AC play between these two groups only ($p < .02$). AC play = Associative/Cooperative play, SD = Standard Deviation

Table 17. Mean Percentage of Play Behaviors

Play behaviors	Children with disabilities (n = 8)		Typical children (n = 6)	
	M (%)	SD (%)	M (%)	SD (%)
Solitary play	38.21*	12.55	14.79	6.54
Onlooker	14.03**	6.12	4.69	2.70
Parallel play	19.70	4.87	20.04	10.77
AC play	21.35	17.73	54.57**	16.95
Solitary + T	6.43**	3.75	0.93	1.77
Onlooker + T	0.93	2.24	0.13	0.57
Parallel + T	5.21	10.99	4.18	9.31
AC play + T	2.11	7.55	3.68	5.24

Note: AC play = associative/cooperative play, T = teacher involvement in play, M = mean, SD = standard deviation, * = $p < .001$, ** = $p < .01$,

Table 18. Mean Percentage of Play Behaviors across Each Child with a Disability

Child/Disability	Solitary play	Onlooker	Parallel play	AC play	Solitary +T
C1 Health impairment	49.14%	23.42%	15.31%	5.36%	13.6%
C3 Developmental delay	33.21%	15.36%	25.36%	20.72%	4.64%
C4 Down syndrome	51.25%	10.31%	16.04%	8.02%	7.60%
C5 Hearing impairment	17.94%	7.74%	14.05%	58.97%	0.83%
C6 Developmental delay	39.32%	14.55%	22.61%	22.73%	4.32%
C7 Cerebral palsy	22.5%	22.5%	15.75%	33.13%	7.75%
C8 Autism	47.33%	8.49%	25.66%	9.90%	4.78%
C9 Developmental delay	45.0%	10.0%	22.79%	12.35%	7.94

Note: AC play = associative/cooperative play, T = teacher involvement in play

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Appendix A. IRB approval

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Vice Chancellor for Research
Institutional Review Board
528 East Green Street
Suite 203
Champaign, IL 61820

February 16, 2011

Michaelene Ostrosky
Special Education
1310 S Sixth St
M/C 708

RE: *Relationships between preschoolers' attitudes and their play behaviors toward peers with disabilities*
IRB Protocol Number: 11360

Dear Michaelene:

Your response to stipulations for the project entitled *Relationships between preschoolers' attitudes and their play behaviors toward peers with disabilities* has satisfactorily addressed the concerns of the UIUC Institutional Review Board (IRB) and you are now free to proceed with the human subjects protocol. The UIUC IRB approved, by expedited review, the protocol as described in your IRB-1 application with stipulated changes. The expiration date for this protocol, UIUC number 11360, is 02/03/2012. The risk designation applied to your project is *no more than minimal risk*. Certification of approval is available upon request.

Copies of the enclosed date-stamped consent forms must be used in obtaining informed consent. If there is a need to revise or alter the consent form(s), please submit the revised form(s) for IRB review, approval, and date-stamping prior to use.

Under applicable regulations, no changes to procedures involving human subjects may be made without prior IRB review and approval. The regulations also require that you promptly notify the IRB of any problems involving human subjects, including unanticipated side effects, adverse reactions, and any injuries or complications that arise during the project.

If you have any questions about the IRB process, or if you need assistance at any time, please feel free to contact me or the IRB Office, or visit our Web site at http://www.irb.illinois.edu.

Sincerely,

Sue Keehn, Director, Institutional Review Board

Enclosure(s)

c: Seon Yeong Yu
Susan Fowler

telephone (217) 333-2670 • *fax* (217) 333-0405 • *email* IRB@illinois.edu

Appendix B

A sample email for recruitment: For principals

February, 2011

Dear _____,

My name is SeonYeong Yu. I am a doctoral student in the Special Education Department at the University of Illinois, Urbana-Champaign. I am conducting a research study to ***investigate what preschoolers think about their peers with disabilities and how they play together.*** It is important to understand what young children think about their peers with disabilities and examine if their thoughts and ideas affect their actual play interactions with peers with disabilities to ultimately promote positive peer interactions between children with and without disabilities. My co-advisors, Drs. Susan Fowler and Michaelene Ostrosky are supervising this research. I also have secured IRB approval for this study.

For this study, I would like to conduct three measurements: (1) Sociometric peer ratings, (2) Social Acceptance ratings, and (3) child interviews. In addition to the these three assessments, I will observe children's play during their free play situations in the classrooms (e.g., center time) across an 8 to 12 week period. The observations will focus on the play behaviors of children with disabilities. Each child with a disability will have a total of 20 observation sessions (200 minutes). I will record the target child's play behaviors such as solitary play, onlooker, parallel play, or associative /cooperative play. Typically developing peers will be observed as they interact with their peers with disabilities. In addition, 2 typically developing children will be observed based on teachers' nominations of children who have good attendance records and show typically preschool age play behaviors. Data from the two typically developing children will be used to compare play behaviors between children with and without disabilities.

I would like to share with you additional information about this study and see if it would be possible to meet with the teachers at_____ Center to see if they would be willing to let me conduct assessments and observations in their classrooms. For this study I plan to recruit 4 classrooms. Each participating teacher will be compensated for time with a stipend of $100 at the completion of the study.

If you have any questions about this research study, please feel free to email me (yu20@illinois.edu) or one of my advisors (ostrosky@illinois.edu, safowler@illnois.edu). You can also call me at 217-417-5223. I look forward to hearing from you. Thank you for considering my request!

Sincerely,

SeonYeong Yu
Doctoral Candidate, Early Childhood Special Education

A sample email for recruitment: For classroom teachers

February, 2011

Dear _____,

My name is SeonYeong Yu. I am a doctoral student in the Special Education Department at the University of Illinois, Urbana-Champaign. I am conducting a research study to ***investigate what preschoolers think about their peers with disabilities and how they play together.*** It is important to understand what young children think about their peers with disabilities and examine if their thoughts and ideas affect their actual play interactions with peers with disabilities to ultimately promote positive peer interactions between children with and without disabilities. My co-advisors, Drs. Susan Fowler and Michaelene Ostrosky are supervising this research. I also have secured IRB approval for this study.

For this study, I would like to conduct three measurements: (1) Sociometric peer ratings, (2) Social Acceptance ratings, and (3) child interviews. In addition to the three assessments, I will also observe children's play during their free play situations in the classrooms (e.g., center time) across an 8 to 12 week period. The observations will focus on the play behaviors of children with disabilities. Each child with a disability will have a total of 20 observation sessions (200 minutes). I will record the target child's play behaviors such as solitary play, onlooker, parallel play, or associative /cooperative play. Typically developing peers will be observed as they interact with their peers with disabilities. In addition, 2 typically developing children will be observed based on teachers' nominations of children who have good attendance records and show typically preschool age play behaviors. Data from the two typically developing children will be used to compare play behaviors between children with and without disabilities.

I would like to share additional information about this study with you and ask if you are interested in letting me conduct this study in your classroom. To express my appreciation, each participating teacher will be compensated for time with a stipend of $100 at the completion of the study.

If you have any questions about this research study, please feel free to email me (yu20@illinois.edu) or one of my advisors (ostrosky@illinois.edu, safowler@illnois.edu). You can also call me at 217-417-5223. I look forward to hearing from you. Thank you so much for your consideration!

Sincerely,

SeonYeong Yu
Doctoral Candidate, Early Childhood Special Education

Appendix C: Parent Consent Form

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Department of Special Education
College of Education
288 Education Building
1310 South Sixth Street
Champaign, IL 61820-6990

February, 2011

Dear Parent or Guardian,

I am SeonYeong Yu, a doctoral candidate of the Special Education Department at the University of Illinois, Urbana-Champaign. I would like to conduct a research study to investigate what preschoolers think about their peers and how they play together. It is important to understand what young children think about their peers and examine if their thoughts and ideas affect their actual play interactions with peers to ultimately promote positive peer interactions. There is a particular interest for this study on peer interactions with children who have disabilities. For this study, 4 preschool classrooms will be recruited. Your teacher has agreed to allow me to conduct this study in his/her class. My co-advisors, Drs. Susan Fowler and Michaelene Ostrosky are supervising this research.

For this study, I would like permission for *your child to complete the following four measurements*:

a. Sociometric Peer Ratings, using photographs, students tell us which children in their classroom they enjoy playing with most. This assessment will take about 10 minutes to complete. Individual photographs will be taken of each child in the classroom whose parents sign and return the consent form and will be used in this activity.
b. The Social Acceptance Rating, measuring the attitudes of your child toward hypothetical peers with disabilities. It has three questions and takes about 10 minutes to complete.
c. Audiotaped interview, asking if your child is aware of any child with a disability in his/her classroom. It has three questions and takes about 10 minutes to complete.
d. Play observation, observing all children's play in your child's classroom during their free play time (e.g., center time) for an 8 to 12 week period. Prior to each observation, all participating children will be asked to put on nametags, which will help me record with whom children are playing. During the observations, I will stand in a position where I can clearly see the children yet not interfere in their play.

Your child's participation in this data gathering is voluntary and he/she may withdraw from the data collection portion at anytime. Withdrawal will not affect your child's relationship with the school or his/her teacher. It will not affect your relationship with your child's teacher if you choose not to allow your child to participate in these assessments. We do not anticipate any risks to participation in this study beyond those that exist in the normal classroom routine. All information gathered will be kept confidential and each child's data will be assigned a number. Any information that could be used to identify your child's name will be omitted. A photograph of your child will be disposed of following the completion of the study. The results of this research will not include any identifying information. In any papers and presentations about this study, your child's name will not be identified. We anticipate that the information gathered from

this study will help teachers and parents to better understand and support young children's social relationships and attitude development.

If you have any questions, please contact your child's teacher or me, SeonYeong Yu (217-417-5223/yu20@illinois.edu), or one of my advisors, Micki Ostrosky (217-333-0260/ostrosky@illinois.edu) or Susan Fowler (217-333-0260/safowler@illinois.edu). **Please sign below indicating that I have your permission to gather data on your child. Kindly return this copy of the consent form to your child's teacher. The second copy of this consent form is for you to keep for your records.** Thank you for considering this request!

Sincerely,

SeonYeong Yu
Doctoral Candidate, Early Childhood Special Education
University of Illinois at Urbana-Champaign

I have read and understand the above information and voluntarily agree to let my child participate in the research project described above. I have been given a copy of this consent form.

____Yes ____No I **give my permission** for _____to participate in ***all data gathering aspects*** of the study described above.

____Yes _____No I **give my permission** for ***my child's responses during the child interview to be audio-recorded*** as described above.

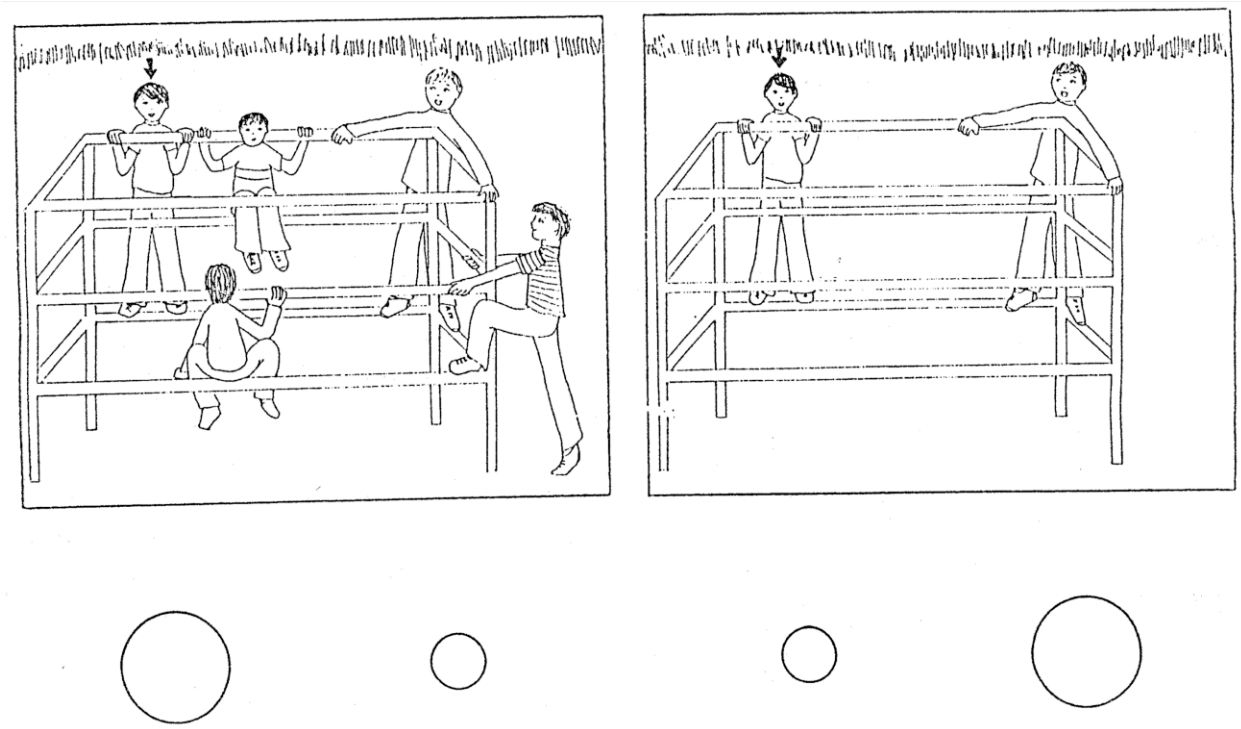
____Yes _____No I **give my permission** for ***a photograph of my child to be taken*** and used for the Sociometric Peer Ratings described above.

Signature Date

If you have any questions about your rights as a research participant please contact Anne Robertson, Bureau of Educational Research, 217-333-3023, or arobrtsn@uiuc.edu or the Institutional Review Board at 217-333-2670 or irb@illinois.edu. BER and IRB are campus offices that work to insure that the rights of participants in research conducted by University of Illinois researchers are protected.

Appendix D

Sample pictures for Social Acceptance Scale



Appendix E

Photographs of Dolls in Wheelchairs

Appendix F

Play Observation Form

Play Behaviors	Operational Definitions
Solitary play (S)	Child sits, plays, or engages by him/herself in some type of activity; child gazes at the toys in front of him or her, or gazes away from the play area (e.g., around the room) without looking at or interacting with others; the child may separate from other children and play apart with chosen toys; the child does not look at what others are doing even if they are physically close.
Onlooker (O)	Child gazes at another person or at a person's actions; child's social status is that of observer, not participant; watches other children play but does not play or interact with them (e.g., child watches another child build a block tower).
Parallel play (P)	Child plays with the same materials in the same vicinity as peers but does not interact with peers; child plays with the same toys but does not interact verbally or nonverbally with peers (e.g., child plays with puzzles, or draws, side by side with peers without interacting with the peers).
Associative/ Cooperative play (AC)	Child's verbal and nonverbal behaviors are socially focused, including talking, sharing objects (e.g., gives an object to another child), or making physical contact (e.g., touches another child); includes playing in an organized manner, planning or having roles assigned, having a shared play theme (e.g., Children play together with plastic food at a house keeping area where they are cooking together with plastic food with one child pretending to be the chef while another is serving the food).
Teacher Involvement (T)	A classroom teacher or other adults such as therapists, social workers, or volunteers are engaged in the play or they facilitate play with children. Also, code if adult(s) are not engage in play with children but talk or respond to children within 3 feet.

- **Target child**:
- **Classroom (Teacher's name)**:
- **Date/Time/Setting:**
- **Observer**:

15s	30s	45s	60s	15s	30s	45s	60s	
S O P AC *T* Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	2 min
S O P AC *T* Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	4 min
S O P AC *T* Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	6 min
S O P AC *T* Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	8 min
S O P AC *T* Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	**S O P AC *T*** Partners _____ _____	10 min

Describe the play context:
(i.e., in what play areas did the target child spend most of his/her time? Who was the target child's main play partner? Were there any specific things related to this child's play that are important to consider?)

Observation Summary for one observation session

- *Indicate the percentage of intervals for each behavioral category*
- *Numbers represent play partners who are engaged in parallel play, or associative or cooperative play with the target child*

Solitary	**Onlooker**	**Parallel play**	**Associative/ Cooperative play**
		1.	1.
		2.	2.
		3.	3.
		4.	4.
		5.	5.
		6.	6.
		7.	7.
		8.	8.
		9.	9.
		10.	10.
		11.	11.
		12.	12.
		13.	13.
		14.	14.
		15.	15.
		16.	16.
		17.	17.
		18.	18.
Total:	**Total:**	**Total:**	**Total:**
Teacher Involvement			
Solitary Play + Teacher Involvement	**Onlooker + Teacher Involvement**	**Parallel Play + Teacher Involvement**	**Associative/Cooperative play + Teacher Involvement**

Appendix G

Example of dyadic analysis

- 1 to 3: Target children with IEPs
- 4 to 10: Typically developing peers

Dyads	**Sociometrics** **2**- Likes to play with a lot **1**- Likes to play with a little **0** – Does not like to play with	**Child interviews** **1**- Identification of a classmate as having a disability **0**- Non-identification of a classmate as having a disability	**Associative/ cooperative play** (Percentage of intervals)	**Parallel play** (Percentage of intervals)
4-1	2	0	20%	15%
4-2	1	0	15%	10%
4-3	0	1	3%	5%
5-1				
5-2				
5-3				
6-1				
6-2				
6-3				
7-1				
7-2				
7-3				
8-1				
8-2				
8-3				
9-1				
9-2				
9-3				
10-1				
10-2				
10-3				

Appendix H

Percentage of associative/cooperative play for each dyad

Class A

	TA1	TA2	TA3	TA4	TA5	TA6	TA7	TA8	TA9	TA10	TA11	TA12
C1	0.13	.00	0.04	.00	0.75	.00	.00	.00	.00	0.46	.00	**4.27***
C3	0.95	0.48	0.71	2.74	3.10	0.12	0.12	3.98	**5.00***	**4.29***	3.45	1.31

Note: C1 had a health impairment. C3 had a developmental delay. TA1 to TA 12 were typically developing peers. * = Children whose percentage of associative/cooperative play with a target child with a disability was over 4.00%.

Class B

	TB1	TB2	TB3	TB4	TB5	TB6	TB7	TB8	TB9	TB10
C4	1.25	2.50	2.40	1.25	.00	0.10	0.94	.00	0.52	0.73
C5	**6.43***	2.98	**13.41***	**6.90***	0.83	1.79	1.93	.00	3.45	3.93
C6	3.30	3.75	**4.32***	**4.32***	1.93	0.45	0.45	0.45	1.25	2.05

Note: C4 had Down syndrome. C5 had a corrected hearing impairment. C6 had a developmental delay. TB1 to TB 10 were typically developing peers. * = Children whose percentage of associative/cooperative play with a target child with a disability was over 4.00%.

Class C

	TC1	TC2	TC3	TC4	TC5	TC6	TC7	TC8	TC9	TC10
C7	**9.63***	**4.38***	**7.26***	**9.13***	**6.13***	0.51	.00	**6.38***	**5.38***	2.21
C8	2.72	0.43	1.96	1.20	0.33	1.74	0.65	0.22	2.20	.00
C9	0.74	0.44	2.21	0.44	2.80	0.59	0.15	0.44	2.65	2.17

Note: C7 had cerebral palsy. C8 had autism. C9 had a developmental delay. TC1 to TC10 were typically developing peers. * = Children whose percentage of associative/cooperative play with a target child with a disability was over 4.00%.